

# **The Gettysburg Campaign: Birth of the Operational Art?**

**A Monograph**  
**by**  
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While hundreds of volumes exist on the Gettysburg Campaign, most examine the battle's tactical framework and focus on the activities of brigades and regiments. However, of more interest to the serving military professional may be an analysis of the degree to which the Confederacy's design and execution exemplify attributes of what is now known as the operational art. This monograph provides just such a study. The importance of the operational level of war and its supporting art cannot be overstated. Only with a recognition of this level between those of strategy and tactics and a mastery of its art can commanders have the appropriate frame of reference to link strategic goals assigned by national authorities with the tactical activities of their subordinate commanders. Although U.S. Army doctrine may have been late in formally recognizing the existence and significance of the operational level of war and its supporting art, it may have appeared very early in our military history. Indeed, without being named as such, the concept may have been placed into effect as early as the American Civil War. Providing a brief background of the Campaign's plan and events, these same are then analyzed against seven characteristics of the operational level of war. Among these characteristics are the degree to which the Confederacy's plan for the campaign (and its subsequent execution) evidenced operational vision, planned and executed distributed operations in the framework of a distributed campaign, and was supported and enabled by continuous logistics and instantaneous command and control. Application of the criteria to the planning and execution of the Gettysburg Campaign reveals that the Gettysburg Campaign does not provide an earlier birth date of the operational art. The following issues prove most significant. First, while Lee's operational vision resulted in a distributed operation, it was not part of a distributed campaign. While Lee could (and did) plan truly distributed operations, he did not have the authority to order other Army Commanders to design and conduct other such operations. Therefore, the Gettysburg operation was not combined with other operations to result in a distributed campaign. Next, within the operation itself, systemic failures in logistics and command and control led to an inability to sustain and coordinate the operation and limit the durability of the Army of Northern Virginia's corps. These shortcomings (combined with others addressed at a later point) lead to the conclusion that the Army of Northern Virginia executed a major operation (vice campaign) that was modeled on the new possibilities of distributed maneuver but was not supported by the critical enablers of advanced communications and transportation technologies.

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## **Abstract**

THE GETTYSBURG CAMPAIGN: BIRTH OF THE OPERATIONAL ART? by Major Kevin B. Marcus, United States Army, 62 pages.

While hundreds of volumes exist on the Gettysburg Campaign, most examine the battle's tactical framework and focus on the activities of brigades and regiments. However, of more interest to the serving military professional may be an analysis of the degree to which the Confederacy's design and execution exemplify attributes of what is now known as the operational art. This monograph provides just such a study.

The importance of the operational level of war and its supporting art cannot be overstated. Only with a recognition of this level between those of strategy and tactics and a mastery of its art can commanders have the appropriate frame of reference to link strategic goals assigned by national authorities with the tactical activities of their subordinate commanders. Although U.S. Army doctrine may have been late in formally recognizing the existence and significance of the operational level of war and its supporting art, it may have appeared very early in our military history. Indeed, without being named as such, the concept may have been placed into effect as early as the American Civil War.

Providing a brief background of the Campaign's plan and events, these same are then analyzed against seven characteristics of the operational level of war. Among these characteristics are the degree to which the Confederacy's plan for the campaign (and its subsequent execution) evidenced operational vision, planned and executed distributed operations in the framework of a distributed campaign, and was supported and enabled by continuous logistics and instantaneous command and control.

Application of the criteria to the planning and execution of the Gettysburg Campaign reveals that the Gettysburg Campaign does not provide an earlier birth date of the operational art. The following issues prove most significant. First, while Lee's operational vision resulted in a distributed operation, it was not part of a distributed campaign. While Lee could (and did) plan truly distributed operations, he did not have the authority to order other Army Commanders to design and conduct other such operations. Therefore, the Gettysburg operation was not combined with other operations to result in a distributed campaign. Next, within the operation itself, systemic failures in logistics and command and control led to an inability to sustain and coordinate the operation and limit the durability of the Army of Northern Virginia's corps. These shortcomings (combined with others addressed at a later point) lead to the conclusion that the Army of Northern Virginia executed a major operation (vice campaign) that was modeled on the new possibilities of distributed maneuver but was not supported by the critical enablers of advanced communications and transportation technologies.

## Introduction

In what many consider the pre-eminent history of the Gettysburg Campaign author Edwin B. Coddington notes that as early as 1900 at least one historian had suggested that “another history of Gettysburg may seem superfluous and presumptuous”.<sup>1</sup> While Coddington then goes on to explain why his book can in no way be considered either, the question remains valid. Indeed, in the one hundred years since that comment, hundreds of additional books have emerged to explain, justify or memorialize the campaign and its resultant battles. So, then, what would make a monograph on any facet of the campaign any less “superfluous or presumptuous”?

Some aspects of the Gettysburg Campaign have not been adequately addressed. One such aspect is the degree to which the Confederacy’s design and execution exemplify attributes of what is now known as the operational art. While discussed by students of military theory and resident in other nations’ military doctrine since the early twentieth century, the concept did not appear in U.S. Army doctrine until the publication of the 1986 version of its keystone operational doctrine FM 100-5 Operations. While the Army may have been late to recognize the importance of providing an emphasis on the concept of operations and the operational art; the concept’s significance cannot be overstated. As a successor of the 1986 version states, only the successful application of the operational art allows “the use of military forces to achieve strategic goals through the design, organization, integration and conduct of theatre strategies, campaigns, major operations, and battles”.<sup>2</sup>

Although U.S. Army doctrine may have been late in formally recognizing the existence and significance of the operational level of war and its supporting art, it may have appeared very early in our military history. Indeed, without being named as such, the concept may have been placed into effect as early as the American Civil War. One author notes “if one were to hazard a precise

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<sup>1</sup> Edwin Coddington, The Gettysburg Campaign: A Study in Command, (New York: Charles Scribner’s Sons: 1968), ix

<sup>2</sup> U.S. Department of the Army, FM 3-0 Operations, (Washington, D.C.: Govt. Printing Office, 2000), 2-3

date as to the birth of the operational art, that date would be April 4, 1864.”<sup>3</sup> This work then describes how Lieutenant General Grant’s plan for that year’s major operations represents the true beginnings of the application of the operational art. However, could an earlier example be found? To put a finer point on it: does the Confederate Army’s design and execution of the Gettysburg Campaign represent successful application of the operational art?

There are indeed enough books written on the Gettysburg Campaign and battle to fill a good-sized library. Some focus on the “strategy” of the campaign; most focus on the tactical activities of corps, divisions, brigades and regiments. Few analyze the campaign in the framework of operational art as the Army currently understands it. Such an analysis is worthwhile and necessary. While adding a unique campaign analysis to the body of historical knowledge, it can also provide an illustrative, easily accessible example of how attributes of operational design can allow the coherent application of the operational art.

To provide a base for subsequent analysis this monograph begins with an overview of campaign design and execution. While hardly comprehensive, this review facilitates subsequent analysis by establishing what the campaign was intended to achieve and, during both the approach and subsequent three days of battle, what actually occurred.

Given an understanding of the campaign itself, the monograph follows with an overview of how the U.S. Army currently views the operational level of war and its supporting art. A discussion of its classical (e.g. Jominian) and modern (e.g. Soviet theorists) roots and influences support this current definition. These bodies of thought, in turn, provide a basis for those characteristics of operational art as described in Vulcan’s Anvil: The American Civil War and the Emergence of the Operational Art. The description and examination of these characteristics provide evaluation criteria for subsequent analysis.

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<sup>3</sup> James J. Schneider, Vulcan’s Anvil: The American Civil War and the Emergence of the Operational Art, (Ft. Leavenworth, KS: School of Advanced Military Studies, 1991), 42

Application of the criteria to the planning and execution of the Gettysburg Campaign reveals that the Gettysburg Campaign does not provide an earlier birth date of the operational art. The following issues prove most significant. First, while Lee's operational vision resulted in a distributed operation, it was not part of a distributed campaign. While Lee could (and did) plan truly distributed operations, he did not have the authority to order other Army Commanders to design and conduct other such operations. Therefore, the Gettysburg operation was not combined with other operations to result in a distributed campaign. Next, within the operation itself, systemic failures in logistics and command and control led to an inability to sustain and coordinate the operation and limit the durability of the Army of Northern Virginia's corps. These shortcomings (combined with others addressed at a later point) lead to the conclusion that the Army of Northern Virginia executed a major operation (vice campaign) that was modeled on the new possibilities of distributed maneuver but was not supported by the critical enablers of advanced communications and transportation technologies.

### **Planning, Preparation and Execution of the Gettysburg Campaign**

No analysis within the framework of the operational art is valid, or even possible, without an understanding of the campaign's strategic framework. While it is not my intention here to replicate in this small space what literally volumes have produced, it is necessary to provide at least a rudimentary overview of the campaign. This overview will begin with a description of the Confederacy's operational environment in the early spring of 1863 and highlight the operational difficulties inherent in that situation. In light of that situation and corresponding difficulties, Lee's plan is presented as a logical solution. The execution of the approach, the three days' battles and the retreat is then addressed in order to facilitate subsequent analysis.

### *Planning and Preparation*

In April and May 1863, the Confederacy faced a dismal situation in the west. Following a victory at Richmond, Kentucky in August 1862, successive losses followed at Corinth, Mississippi in October and Murfreesboro, Tennessee in January 1863. Of more significance, then Major General Grant's coordinated advances on Vicksburg, Mississippi were placing ever more pressure on the Confederacy's ability to retain access to the Mississippi River. While his earlier overland and amphibious attempts to place a respectable force east of the river had been unsuccessful, the winter's bayou operations and the spring's cavalry raids had justifiably concerned Confederate authorities. Moreover, even with Vicksburg in Confederate hands, the Union seizure of New Orleans blocked Confederate goods from exiting the Mississippi. Thus, the south was unable to use its relatively ample Trans-Mississippi supply base to reinforce its forces.

Confederate forces had been more successful in the east. Since December's battle at Fredericksburg, the Army of Northern Virginia and its rival Army of the Potomac had been in a standoff along the Rappahannock River. The most recent attempt to break the stalemate by maneuver had ended in Union Major General Burnside's infamous "mud march" which was blunted not so much by Confederate prowess but by the prodigious powers of nature.

Relative strengths between Union and Confederate forces were comparable. While these numbers are approximations, returns dated 30 April 1863 witness Confederate forces widely scattered throughout the South. Major concentrations included General Lee's own Army of Northern Virginia with 77,379 and Bragg's Army of Tennessee with 67,838. Departmental troops included Beauregard's forces of the Department of Georgia, Florida and North Carolina at 37, 520, and Pemberton's Department of Mississippi and East Louisiana with just over 61,000.<sup>4</sup>

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<sup>4</sup> U.S. Department of War. The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies. (Washington, D.C: Government Printing Office, 1880-1901), Series IV, Part II, p. 530. Hereafter cited as OR

Union forces were similarly dispersed, reaching from the Minnesota to Maine. With a total of some 435,000, primary concentrations were 115,000 in Virginia with the Army of the Potomac, 84,000 in Middle Tennessee with the Army of the Tennessee, 38,000 in Kentucky with the Army of the Ohio, and Grant's Army of the Mississippi of approximately 100,000.<sup>5</sup>

Of note in both contemporary and modern treatments of the campaign is a semantic issue that complicates attempts to synthesize military history with current military thought. What some writers (namely Archer Jones) identify as “the Strategic Problem” is identified in current military thought as “the Operational Problem”. In current military doctrine, strategy focuses assets on a desired strategic end-state. In the case of the Confederacy this was an independent nation of some form. The “strategic problem”, then, are those issues which would result in an integrated, comprehensive strategy to end the war and reach that end-state. Given the scope of this paper, it will leave the determination of that strategic problem to others. It will instead focus on the operational problem as it existed in spring 1863.

The characteristics of that problem were how and where to apply decisive military force. The “how” was an issue of needing to protect key communications nodes and production centers while providing a viable force to maneuver. The “where” was a question of having to choose between eastern and western theaters. In the eyes of many it was, as the Confederate President Jefferson Davis observed, “a question between Virginia and Mississippi”.<sup>6</sup> Both Davis’ correspondence and his efforts to reinforce the western Confederacy evidence his justified concern for the western theatre. However, the move of the recuperated Lieutenant General Joseph Johnston to command the combined forces of Bragg and Pemberton had not met with success, neither had attempts to reinforce those forces along the Mississippi. Alternative plans were needed. Thus, in the spring of 1863 several plans emerged to provide decisive action to

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<sup>5</sup> OR, Ser. I, Vol. XXVII, Pt. III, pp. 450-455: Compare the 70,000 strong Union force dedicated to the security of Washington and Baltimore with Elzey's Confederate force of just under 3,600 to protect Richmond.

<sup>6</sup> Lynda Lasswell Crist ed., The Papers of Jefferson Davis, (Baton Rouge: L SU Press, 1997), 179.

relieve the situation in the west, preserve key lines of communication, defend Confederate property and contribute to the wearing down of the Union's will to fight.

The first of these was one claimed to have been developed by Lieutenant General James Longstreet upon his return from detached service in southeastern Virginia. General Longstreet met with Secretary of War Seddon in March 1863 and proposed a move of part of the Army of Northern Virginia through eastern Tennessee to reinforce Bragg. Along with forces under General Johnston, the combined force would then "crush Rosecrans", invade Kentucky and march on Cincinnati.<sup>7</sup> Another solution, like to the first, was suggested by Lieutenant General P.G.T. Beauregard, then commanding the Department of Georgia, Florida and South Carolina. General Beauregard recommended a reinforcement of Bragg's force from troops from both Mississippi and Virginia and then an invasion of Kentucky and Ohio. Both Longstreet and Beauregard seemed to join with Davis in realizing the primacy of and opportunities within the Confederacy's western theatre. These plans met with the willing ears of the Secretary of War who, throughout the early part of 1863, raised the idea of pulling troops from Lee's Army of Northern Virginia to reinforce troops in west.

General Lee did not support this plan. Asserting that his Army of Northern Virginia was the Confederacy's most viable force, Lee proposed strengthening his own force and embarking on an invasion of the north. Lee's undoubted credibility with both Davis and Seddon would later help persuade them of the plan's soundness and approve its adoption. This credibility was well earned; since having assumed command of the Army of Northern Virginia in July 1862, its record had been one of great success.

This success was, in many ways, attributable to the talents of its commander. Lee, having graduated from West Point first in the class of 1827 went on to a series of staff assignments both in peace time on the southern coast and in combat as one of General Winfield Scott's staff.

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<sup>7</sup> James Longstreet, "General Longstreet's Account of the Campaign and Battle", Southern Historical Society Papers 5 (1878), 246

Assignment in the 1850s as the Superintendent at West Point was followed by a transfer to the Cavalry and assignments as the Lieutenant Colonel of the First Cavalry and Colonel of the Second Cavalry. Upon resigning his commission in the United States Army he was appointed Commander of all Virginia troops and given his first independent command in West Virginia. Following an undistinguished debut there, he commanded the Department of South Carolina, Georgia and Florida and supervised its proper fortification. Lee was then appointed military advisor to the President in March 1862 and following Johnston's wounding during the Peninsula Campaign was placed in Command of the Army of Northern Virginia on 1 June 1862.<sup>8</sup> While Lee had commanded nothing larger than a cavalry regiment before the Civil War, he had proven himself an able combat commander.

While Lee acknowledged the need to relieve the situation in the west, his means of doing that were diametrically opposed to those recommended by Seddon, Longstreet and Beauregard. Lee's plan was to first to clear the Shenandoah Valley of Union troops thereby opening it for movement and resupply. By means of maneuver he would then force the Union Army of the Potomac out of its strong position along the Rappahannock River, invade Pennsylvania and thereby effect a "transfer of the scene of hostilities north of the Potomac" in order to gain an opportunity to "strike a favorable blow" against the enemy.<sup>9</sup> Lee's stated goals were threefold. The first was the relief of Vicksburg. Lee thought that the success of the operation would relieve pressure on the Mississippi noting that if all occurred to plan, the Army of Northern Virginia's success might "compel the recall of some of the enemy's troops from the west".<sup>10</sup> Thus, Lee did not recommend an invasion purely in view of the Army of Northern Virginia's situation; he saw it as supporting the larger strategic picture.

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<sup>8</sup> Jay Luvaas, "Lee and the Operational Art: The Right Place, The Right Time" *Parameters*, 22 (3) (Autumn 1992), 13-14

<sup>9</sup> OR Ser. I Vol XXVII Pt. I, 305: This is taken from Lee's first comprehensive report on the Campaign dated 31 July 1863.

<sup>10</sup> OR, Ser. I Vol. XXVII, Pt III, 924-925

This larger focus, not normally ascribed Lee, is also evident in the second goal: to sway northern public opinion against the war. In a letter to the President on 10 June 1863 Lee, noting the gathering strength of the Northern peace parties, observed that "...we should neglect no honorable means of dividing and weakening our enemies [and] give all the encouragement we can...to the rising peace party of the North".<sup>11</sup> Finally, while not alluded to in either of Lee's two formal after-action reports (July 1863 and January 1864) Lee undoubtedly wanted to improve the supply of his army by allowing it to live off the rich farmlands of southern Pennsylvania, as yet untouched by the war.

Lee's plan can be seen as a logical solution to the Confederacy's operational problem. This was not simply a "strategic raid" but a campaign designed to accomplish ambitious ends rooted in an understanding of the situation as it currently existed. First, Lee saw no immediate necessity to transfer troops to Mississippi because he thought Grant would likely be forced to withdraw from Vicksburg. Indeed, in April of 1863 Grant's force had met with no great success and was no closer to investing Vicksburg than they had been earlier that year. Moreover, during the Gettysburg Campaign proper with Grant besieging Vicksburg, no one, certainly neither Davis nor Lee, would ever imagine the quick collapse that did occur in late June and early July of that year. Furthermore, he made a logical assumption (given the conventional military wisdom of the time) that a series of related operations would cause the Union to move forces away from Vicksburg as a reaction. Observing the relationship between concentrated force Lee states that "it should never be forgotten that our concentration at any point compels that of the enemy and his numbers being limited, tends to relieve other threatened localities."<sup>12</sup> Next, he saw no need to maintain a large number of forces along the coast. While Union forces were positioned in southern Virginia and along the Carolina coasts, he thought it unlikely that they would campaign during the summer months simply because of the debilitating effects of the heat and disease so prevalent in that

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<sup>11</sup> Ibid., 881

<sup>12</sup> Ibid., 924

area.<sup>13</sup> Lee as well saw the need for action, for activity. While a strategic defense might have been strategically sound, without supporting operational offensive operations, it would never be decisive. As early as March 1863 Lee was discussing the need for offensive action with one of his subordinates when he observed that “there is no better way of defending a long line than moving into the enemy’s country”.<sup>14</sup>

Thus, Lee’s plan had a base in logic. While many of those assumptions used to justify the plan later turned out to be false (e.g. Grant, of course, did not simply withdraw from Vicksburg) can in no way reflect on their essential contemporary soundness. While no record of the meetings exist, it is probable that Lee presented these arguments to both Davis and Seddon in a series of meetings, culminating in May of 1863 where formal approval of the plan was given.

### *The Approach*

The campaign began with operations designed to protect the Army of Northern Virginia’s flank and allow its movement through the Shenandoah Valley. In March, Major General Samuel Jones (with approximately 7300 effectives) was sent into West Virginia’s Kanawha Valley to protect the western flank of Lee’s Army. In June, Jones’ efforts were reinforced when Lee dispatched General Imboden’s Partisan Cavalry Brigade to into the Shenandoah Valley. Imboden was ordered to “attract the enemies attention [and] do them all the injury in your power by striking them a damaging blow at any point where the opportunity offers”<sup>15</sup> With both infantry and cavalry protecting his western flank and preparing the Valley for subsequent operational maneuver, Lee began the movement of the Army of Northern Virginia’s three corps.

The Army of Northern Virginia was, essentially, to move in three phases. Lieutenant General Ambrose Powell Hill’s III Corps was to remain near Fredericksburg in order to guard the remainder of the force. Lee issued him clear instructions to defeat penetrations of the

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<sup>13</sup> Ibid.

<sup>14</sup> Michael A. Palmer, Lee Moves North: Robert E. Lee on the Offensive from Antietam to Gettysburg to Bristoe Station, (New York: John Wiley & Sons, 1998), 423

<sup>15</sup> OR Ser. I Vol. XXVII, Pt. III, 865

Rapahannock River line; pursue Hooker if he left or, if required, to delay a Union advance.<sup>16</sup> The I Corps, commanded by Lee's senior corps commander Lieutenant General James Longstreet, was to move to Culpeper Courthouse and be prepared to assist Hill as required. The remaining corps (II Corps) commanded by Lieutenant General Richard Ewell was to move first and proceed up the Shenandoah towards crossing points on the Potomac River. Both Longstreet and Hill would then follow on order.<sup>17</sup>

The first moves occurred beginning 3 June with McLaw's Division of Longstreet's Corps. Ewell's Corps then moved as Hill's Corps remained in position to guard the Army's flank. By 13 June, Hooker (finally discerning the scale of the Confederate move) began moving the Army of Potomac. Relieved of its responsibility to guard against an advance by Hooker, A.P. Hill's Corps began its move following Longstreet. Ewell, working with Jenkin's Cavalry Brigade of Stuart's Cavalry Division successfully cleared the Valley of Union forces up to Harper's Ferry from 15-17 June. Concurrently Longstreet moved east of the Valley to screen the east flank and "throw [Hooker] back upon the Potomac" if threatened.<sup>18</sup> Not understanding Lee's orders or the intent behind them Longstreet followed Ewell into the Valley instead of staying east of it as Lee originally intended him to do. Lee noting with regret that Longstreet's presence "east of the mountains would have served more to confuse him" nonetheless ordered him to "advance as fast as you can" and ordered Hill to follow Longstreet.<sup>19</sup>

The slow pace of the approach frustrated Lee. Both during the campaign and after the war, he would continue to observe regretfully this lack of tempo. Lee, and others, would attribute this to a lack of intelligence noting in his report to the President that the advance towards Pennsylvania "was conducted more slowly than it would have been if the movements of the Federal Army been

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<sup>16</sup> Ibid., 859

<sup>17</sup> James I. Robertson, General A.P. Hill: The Story of a Confederate Warrior, (New York: Random House, 1987), 200

<sup>18</sup> OR, Ser. I, Vol. XXVII, Pt. III, 890-96

<sup>19</sup> Ibid.

known".<sup>20</sup> However, Lee was not simply concerned with his lack of knowledge regarding the movements of the Army of the Potomac. Rather his lack of knowledge regarding enemy activities throughout the theatre caused him to move more slowly than he intended. Most notably he was concerned about Union activities along the North Carolina coast and in southwestern Virginia. Noting reports in the Northern press of possible movements in the Peninsula, Lee was loath to commit his force in a rapid move with the possibility of envelopment from his rear.<sup>21</sup> In part, his fears were justified. As early as 8 June the Union General-in-Chief Henry Wager Halleck advised Major General Foster, then commanding in New Berne, North Carolina that "...it is suggested your army corps could resume offensive operations, destroy railroads, etc."<sup>22</sup> Just one week later, Halleck would direct Major General Dix, commanding at Fortress Monroe that "all your available force should be concentrated to threaten Richmond".<sup>23</sup> While neither force would ultimately constitute a serious threat, their isolated raids in both Virginia and the Carolinas would concern Confederate authorities throughout the summer.

The Union had as well its share of uncertainty during the Army of Northern Virginia's approach. As previously noted, this uncertainty was first evidenced as Hooker waited until 13 June to finally be convinced that the Army of Northern Virginia was moving as a body. Even after that date, the Army of the Potomac's move was characterized by hesitation due to the lack of information regarding not so much the location of Confederate forces but their intentions. This uncertainty led to fears that Lee would attack Pittsburgh, Washington or West Virginia. Washington's War Department offices were busy throughout the month of June as representatives were dispatched Pittsburgh to instruct the citizenry to construct fortifications, the State of Ohio

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<sup>20</sup> OR, Ser. I, Vol. XXVII, Pt. I, 307

<sup>21</sup> OR Ser. I Vol. XXVII, Pt.III, 295

<sup>22</sup> OR, Ser I Vol. XXVII, Pt. I, 37

<sup>23</sup> Ibid., 111

prepared for invasion from West Virginia and the President ordered 100,000 militia called into Federal service for six months time in view of the current emergency.<sup>24</sup>

Many post-war commentaries have attributed much of Lee's uncertainty to a lack of cavalry reconnaissance. The basis of the controversy lies in the orders to and subsequent behavior of his Cavalry Division commanded by Major General James E.B. Stuart. On 23 June, Lee issued instructions for Stuart to maintain contact with Hooker but if the Army of the Potomac remained "inactive" he could leave two brigades in contact and move with the remainder of his force. Moreover, if Hooker did not move north, Stuart was directed to move the remainder of his force into the Valley and then cross the Potomac at Shepherdstown and subsequently move towards Frederick, Maryland. At any rate, he was to "move on and feel the right of Ewell's troops collecting information, provisions, etc".<sup>25</sup> At issue was the route Stuart should take. At this point were he to follow the Army through the Valley, he would be behind parts of two Corps and would be unlikely to get in position vis a vis Ewell for days. His other option was to move east, cross the river and ride east of the Union army interposing it between he and the Army of Northern Virginia. He adopted the latter option, but not before he detached two of his four brigades under the command of Brigadier General Robertson to serve as Lee's Army-level cavalry. Robertson, whose career to date showed him in need of supervision, was told by Stuart to cover Ashby and Snicker's Gaps in the Shenandoah (in order to protect the Army's eastern flank), proceed to Harper's Ferry behind the Army, then cross the Potomac and follow Ewell's Corps to its right and rear.<sup>26</sup> Thus, Lee's cavalry force was split with its commander trying to do all he was directed to do with two separate forces.

By 25 June, the bulk of the Army of Northern Virginia had crossed north of the Potomac. The

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<sup>24</sup> Ibid., 137

<sup>25</sup> OR, Series I Vol XXVII Pt. III, 923

<sup>26</sup> Ibid., 927

corresponding slowness of Union movements led Lee to believe at that point that he had outmaneuvered Hooker and that while dispersed he could concentrate his force at any point within 48 hours to destroy the strung out Army of the Potomac in detail.<sup>27</sup> Ewell's Corps was ordered to Harrisburg (and to seize it if circumstances allowed), while Longstreet would move in his support. Hill's Corps would cross the Susquehanna River south of Harrisburg, Pennsylvania to seize the railroad crossings between Philadelphia and Baltimore, cut Union lines of communication and draw Union forces northward.

While these final preparations were being made for the seizure of objectives in Pennsylvania, everything changed when Lee received word from a scout that confirmed movement of the Army of Potomac across the Potomac River and into Maryland. With the possibility of the severance of his lines of communication or the destruction of his forces in detail, Lee countermanded his orders in favor of a concentration east of the mountains. Both Hill and Ewell were ordered to move on the Cashtown area as a point of concentration, while Longstreet would follow Hill.

Union forces were now in Maryland with their lead corps between Frederick and Emmitsburg. The Army of the Potomac's commander (Hooker) had been relieved on 27 June and was replaced by the then V Corps commander Major General George Meade. Meade had, from a number of sources, a good idea of Confederate dispositions but was not as clear as to their intentions. Thus, on 30 June with the Army still in Western Maryland he resolved to "hold the Army pretty nearly in the position it now occupies until the plans of the enemy have been more fully developed".<sup>28</sup>

If Lee had developed a plan for coordinated contact with the enemy main body it was certainly not shared with his subordinates; if he had developed and communicated a plan, its execution showed it was not understood. Lee's subordinates would fight a meeting engagement that presented him a decisive engagement as a *fait accompli*. Nonetheless, many have commented on the unique suitability for battle at, or over, the town of Gettysburg. The hub of nine major roads

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<sup>27</sup> OR, Supplement to Vol. XXVII, 436: Report of Brigadier General Trimble's meeting with General Lee.

<sup>28</sup> OR Ser. I Vol. XXVII Pt III, 39

reaching in all directions and a major rail terminus for south central Pennsylvania, it was, in retrospect a logical objective. Moreover, its unique terrain provides significant defensive terrain both north and south of the town proper. However, these advantages were not identified during either side's planning or preparation; rather the advantages made themselves known at various stages over a three day period beginning on 30 June.

As noted in the introduction, the intent is not to provide a detailed account of the tactical fight over the three-day battle; neither space nor scope allow a complete treatment. However, some overview of the battle is necessary to allow analysis of the battle's ability to evidence the presence or absence of the characteristics of operations and operational art.

### ***The Battle***

On 30 June, the Union's Army of the Potomac numbered some 93,500 while the opposing Army of Northern Virginia had approximately 70,000.<sup>29</sup> Both forces were dispersed but the Army of Northern Virginia had, in effect, stolen a days march on their enemies and was converging on the Cashtown-Gettysburg area. Union forces were still in Western Maryland save Major General John Buford's cavalry division in Pennsylvania screening the Army's advance. It was this cavalry force which would gain the battle's first direct fire contact. Pettigrew's Division of Hill's Corps was conducting a reconnaissance in force on 30 June and made contact with them on Herr's Ridge just west of the town of Gettysburg. Not expecting serious resistance, General Hill decided to continue his advance the next morning and relayed the same to Ewell, then north of Gettysburg. Ewell in turn relayed the "plan" to Lee who directed Ewell not to bring on a general engagement until the rest of the Army came up.<sup>30</sup>

The next day, 1 July, did see a general engagement. The first engagements occurred just west of the town as the lead Division of Hill's Corps gained contact with one of Buford's cavalry

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<sup>29</sup> Edward Coddington, The Gettysburg Campaign: A Study in Command. (New York: Scribners and Sons, 1968), 248: Coddington acknowledges these are based on COL Thomas Livermore's own estimates, which are indeed only estimates.

<sup>30</sup> Ibid., 248

brigades. Throughout the morning Hill would commit ever more forces against first the cavalry to his front, and later reinforcing infantry from Union Corps as they arrived throughout the late morning and early afternoon. North of the town, more coordinated attacks against Union forces occupying less defensible terrain resulted in the collapse of their defensive lines at approximately 4 p.m. Retreating through the town, Union forces would coalesce around one division of the Union XI Corps then retained in reserve on Cemetery Hill. The day would end with Union forces anchored on Cemetery Hill and their line extending just south of it along Cemetery Ridge. Confederate forces were both south of the town (Ewell's Corps) and west of the town (Hill's Corps) with the remaining Corps (Longstreet) approaching from Cashtown.

The second day began with both sides contemplating their options for renewed battle. Meade arrived in the early morning, sometime before dawn having spent the previous day in Taneytown, Maryland. Meade's II Corps commander (Major General Winfield Scott Hancock) having commanded three Corps throughout the first days battle had kept him well informed as to the day's progress and advantages of the position.<sup>31</sup> He had, by that point, developed plans either for a defense, or for retreat to more defensible terrain to the south of Gettysburg.<sup>32</sup> Union forces would continue to close on Gettysburg throughout the morning of 2 July; by noon, elements of five Union Corps were positioned from Culp's Hill, to Cemetery Hill and along Cemetery Ridge. Meade was set for the defense of his position against the expected, and in his mind imminent, Confederate attack.

Lee, perhaps, had more options. He could resume the attack from forces in position, he could conduct a close envelopment from the south or northeast or could consolidate his forces and defend in place either south or west of the Union positions. His initial plan, to attack, was not concurred with by at least two of his Corps Commanders. First visiting Ewell at his headquarters

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<sup>31</sup> Ibid., 324

<sup>32</sup> Author: I make reference to the Pipe Creek Circular which outlined Meade's branch plan for a defense south of Gettysburg. While an issue of contention after the war, the development of just such contingency plans is an integral element of operational and tactical plans in modern military doctrine.

late in the afternoon of 1 July, he discussed the possibility of resuming the attack on Cemetery Hill. Ewell, encouraged by his Division Commanders, discouraged such an assault noting the strong Union position and preponderance of troops then occupying the hill.<sup>33</sup> Lee then proposed a move of Ewell's Corps to the Confederate right in order to reinforce that flank for a proposed attack against the Union left. This too met with their disapproval as Early noted the psychological effect on the troops of what could be perceived to be a retreat. After Lee left in frustration, an officer reconnaissance dispatched from Early's Division found Culp's Hill unoccupied. Ewell then recommended an assault on Culp's Hill (vice Cemetery Hill) as a compromise.

General Longstreet arrived on the field approximately 5 p.m. on 1 July and recommended an envelopment or turning movement south of the Union left flank. While Longstreet's recommendation has provided a cottage industry for Gettysburg historians since the battle, Lee's decision not to adopt such a course of action was logical at the time. With a lack of detailed reconnaissance, Lee had no idea of the location of advancing Union units. Any one of those units could have interdicted such a move and proven disastrous to the Army of Northern Virginia as it moved over unknown ground against an unknown enemy.

The plan, as finalized on the morning of 2 July was for two coordinated attacks on the Union line. On the Confederate right, Longstreet's Corps would conduct a two-phased attack which would first secure artillery firing positions along the Emmitsburg Road in order facilitate a close envelopment of the Union left flank. On the Confederate left, Ewell's Corps would assault Culp's Hill in order to allow the enfilade of the Union lines on Cemetery Hill and Ridge and prevent any reinforcement against Longstreet's attack. A.P. Hill's Corps, center of the Confederate line, would "threaten the enemy's center as to prevent them from reinforcing either

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<sup>33</sup> OR Supplement, Vol. 5, 381: Ewell's Corps Engineer (CPT Jedidiah Hotchkiss) noted that Ewell was in bad temper and reference the planned assault on Cemetery Hill "...not, in my mind, very encouraged for its success".

flank.”<sup>34</sup> Thus, with the understanding that the decisive point was the collapse of the Union left flank, Lee had made provisions to isolate that flank (e.g. Ewell’s attack on Culp’s Hill), allow supported movement to a position of advantage relative that flank (attacks to seize artillery firing positions) and finally, a close envelopment of the flank itself.

Lee’s plan would be refined throughout the morning as a series of area reconnaissance missions performed by his staff confirmed and denied Union dispositions along Cemetery Ridge. Climbing Little Round Top, Colonel A.L. Long found it unoccupied but could not from that height really see the true end of the Union lines. What he did report as the end of the Union line was significantly north of what it really was at the time of the attack. Based on the results of these reconnaissance efforts Lee then decided to attack to the oblique north of both Big and Little Round Tops as they would offer no threat to his flank if unoccupied. Longstreet, who would be the day’s main effort, meanwhile worked (with mixed results) to close his corps and position it for the attack.

After a series of miscues and false starts, Longstreet’s attack finally began at approximately 4 p.m. Initially attacking with Hood’s Division, his assault met stiff resistance from elements of three Union Corps on and around a line from Little Round Top to Devil’s Den and continuing to the Wheatfield and Peach Orchard. This attack was reinforced at 6 p.m. when McLaw’s Division attacked directly against the crotchet formed by Major General Sickles’ Union’s III Corps on the Peach Orchard.<sup>35</sup> Longstreet’s attack would end with Hood’s Division repulsed at Little Round Top, but in possession of Devil’s Den, and McLaw’s Division in possession of the desired artillery firing positions along the Emmitsburg Road. On the Confederate left, Ewell’s Corps attacked Culp’s Hill at approximately 6:30 p.m. and in a series of attacks would gain lodgments on both Culp’s and Cemetery Hills. While the attack on the former ended in Confederate control

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<sup>34</sup> Coddington, 383

<sup>35</sup> Jomini, p.503: The term “Sickles’ Salient” while, commonly used, is misleading. According to the Jominian doctrine of the time the salient was only used in very special cases while the crotchet was “normally used in the defense”. “Sickle’s Salient”, though, has a much better ring than does the alternative.

of Union works (abandoned by troops moving to reinforce the Union left) the gains on Cemetery Hill could not be maintained and were abandoned. While Lee noted the gains made during the day, the attacks were not as decisive as he would have desired and he was understandably peeved about the lack of success.<sup>36</sup>

While Union forces had been forced from their positions on their left, Meade had to have been pleased with the day's results. While Confederate gains were made against his left, he still retained possession of the heights on both right and left flanks and his center had held against a division-sized attack by Hill's Corps in the late afternoon. Still, due to the confusing piecemeal commitment of reinforcements to plug holes in the battered left flank, his lines were a shambles of mixed units. Moreover, his casualties had been significant, with at least one corps (III Corps) almost completely shattered. An impromptu meeting of Union commanders at Meade's headquarters late on 2 July became a full-scale council of war as Meade discussed his options with his subordinate commanders. After Meade's Chief of Staff put the matter to a vote the communal decision was to remain in place and await Lee's attack.<sup>37</sup>

Lee's plan for the third day was originally to continue the second day's attacks but better coordinate their synchronization. Longstreet, now reinforced by his remaining Division (Pickett's), was to attack the next morning against the Union left while Ewell was directed to "assail the enemy's right at the same time"(emphasis added).<sup>38</sup> Lee envisioned the possibility of success given his possession of the desired artillery positions (although they turned out to be too far advanced) and his perceived weakness of the Union center after its use on the second day to reinforce both flanks.

The third day's battle began at approximately 5 a.m. when Ewell's attacks began against Culp's Hill. In a series of brigade and division-sized attacks, Ewell's men repeatedly charged

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<sup>36</sup> OR, Ser. I, Vol. XXVII, Pt. II, 320

<sup>37</sup> Coddington, pp.450-451

<sup>38</sup> OR, Ser. I, Vol. XXVII, Pt. II, 320

Union fortified positions. While undoubtedly brave these attacks met with limited success and culminated by 11 a.m. Longstreet, meanwhile, did not continue his attack as Lee had directed. Lee's early morning visit to Longstreet's Headquarters revealed that Longstreet was in the midst of moving units around Big Round Top in order to conduct his favored envelopment or turning movement on the Union left.<sup>39</sup> Because Longstreet could not attack in concert with Ewell, Lee was forced again by circumstance to revise his plan.

The new plan, which evolved over the morning of 3 July, was for an attacking force formed around Longstreet's Corps to conduct a frontal attack of the Union center. While controversy remains over the rationale behind the attack's final task organization the assaulting force was finally composed of portions of two divisions from Hill's Corps and only one of Longstreet's Corps.<sup>40</sup> Hill, with the remainder of his Corps, would hold the center and "avail himself of any success that might be gained".<sup>41</sup> Supporting the attack, Stuart's Cavalry Division would ride east of Ewell's flank and position itself behind the Union center in order to interdict Union reinforcements and exploit the penetration.<sup>42</sup>

The attack began with preparatory massed artillery fires against Union forces and batteries along Cemetery Ridge. Fusing and range problems prevented the barrage from being as effective as it could have been. Indeed, the Union counter-fire was arguably more successful causing severe impact on the Confederate troops' assault positions along Seminary Ridge. The assault proper began approximately 3 p.m. in two echelons: Pickett's and Heth's Divisions in the first echelon. The attack, while by all accounts a grand sight, met with disaster very quickly. Longstreet's left, composed of forces largely mauled on the 1 July battle, suffered heavy losses from both rifle and artillery fire and culminated prior to the Emmitsburg Road. The center

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<sup>39</sup> Coddington, pp. 456-457

<sup>40</sup> Ibid., 460: Post-war writers would often opine that Longstreet's two other divisions (Hood and McLaws) were intended to support the attack but were not committed due to Longstreet's opposition to the attack.

<sup>41</sup> *OR*, Ser. I, Vol. XXVII, Pt. II, 320

<sup>42</sup> Ibid., 699

composed of Heth's Division (commanded by Brigadier General Pettigrew in place of the wounded Heth) and Pickett's Division would conduct a series of oblique movements, cross Emmitsburg Road and be engaged with massed Union artillery. Advancing ever closer, the ranks converged and charged the center in a mass move against the now famous "clump of trees" marking the center of the Union lines. While elements of two divisions would gain footholds in the Union lines, neither penetration could be supported and the attack culminated with the Union center unbroken. Expecting an immediate counterattack, Confederate forces streamed back to Seminary Ridge and formed for the defense of their lines. While exhilarated, Meade chose not to counterattack but instead consolidated his lines and stayed in place.<sup>43</sup>

Cavalry fights both south and east of the field proper would end the day. In the south, Hood and McLaw's Divisions blunted attacks by Union cavalry while in the east Major General Gregg's Union Cavalry Division (reinforced by Custer's Brigade) fought an inconclusive engagement that ended in General Stuart's withdrawal to Confederate lines.

Following the attack's repulse Lee would later report to the President that "owing to the strength of the enemy position and the reduction of our ammunition, a renewal of the engagement could not be hazarded".<sup>44</sup> At a council of war with his subordinates (likely the Battle's first) a decision to withdraw was made. With the II Corps trains beginning to move on 3 a.m. on 4 July and subsequent cavalry reconnaissance of the routes, the main body of the Army of Northern Virginia would clear the battlefield by 7 July. Meade followed tentatively, but was unable to interdict the Confederate retreat. By 10 July, Lee's forces had reached the Potomac River at Falling Waters and Williamsport, Maryland. Finding the Potomac too swollen to cross they then prepared to defend themselves. While fully expecting Union attack; none was forthcoming and

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<sup>43</sup> Coddington, 533-534: While criticized for the lack of counterattack; such an attack would have been a mistake. Advancing Union forces were badly intermingled and an attack would have taken hours to prepare only to have to advance over the same deadly ground traversed by the attacking confederates.

<sup>44</sup> OR, Ser. I, Vol. XXVII, Pt. I, 298

the Army of Northern Virginia successfully withdrew across the Potomac on 13-14 July. The campaign was at an end.

### **Nature and Evolution of Operational Thought**

As Pickett's and Pettigrew's Division were slaughtered between Seminary and Cemetery Ridges, General W.H.C. Whiting (then Commanding Confederate forces in Wilmington, North Carolina) was writing a curious letter to General P.G.T. Beauregard. In this letter, Whiting responded to Beauregard's submission of his suggested plan for the 1863 campaign and wholeheartedly approved noting that "it is surely a correct and comprehensive application of the true principles of war, the massing of forces on the decisive points, dividing the enemy and beating his columns successively."<sup>45</sup> Whiting went on to complain that these vaunted principles had not been followed to date and "...we have heretofore carried on the war depending on the enemy for the development of his various crude and undigested plans" and that the war up to that point "...has therefore (sic.) been a series of great and widely extended conflicts and of many battles, glorious to us indeed, but indecisive."<sup>46</sup>

Indeed, many were frustrated in the summer of 1863. While commanders of the time were applying principles and tactics proven effective in the past, those same results were not being gained in the present. War had changed; the fundamental theories governing its practice needed to change as well. Quite simply, commanders of the time were searching for an answer to the question "How do you destroy an enemy armed with new technology and dispersed in time and space?" This section will describe how that question was ultimately answered. It begins with an explanation of the current understanding of the operational level of war and its supporting art. The antecedents of this current understanding are then traced beginning with an explanation of

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<sup>45</sup> OR, Ser. I, Vol. XXVII, Pt. III, 965-966

<sup>46</sup> Ibid.

the context provided by Jominian theory and the antecedents of current thought as expressed by the Soviet theorists of the 1920's. Finally, it will present a model that describes eight key characteristics of operational art. It is this section sets the stage for the analysis and evaluation of Lee's operations in the summer of 1863.

The United States Army was late to recognize the concepts of the operational level of war and operational art. The recognition of a level of war (operational) between strategic and tactical levels was first acknowledged in the 1982 version of FM 100-5 Operations. Its supporting art was noted in the 1986 version of the same manual.

The operational level of war is seen as one of the three levels that together provide a logical progression or continuum to clearly link strategic objectives with tactical actions. Used in concert they allow commanders at each level to visualize a logical flow of operations and assist with the allocation of resources and tasks.<sup>47</sup> Commanders at the operational level translate national or theatre strategy into being through the arrangement of tactical forces and tasks needed to accomplish strategic ends. Operational forces and tasks are orchestrated using campaigns and major operations. In a campaign, operational commanders conduct related (e.g. cognitively not necessarily spatial) major operations that are themselves a series of tactical actions with a common or supporting purpose.<sup>48</sup> In the process of campaign design and planning, operational commanders exercise the operational art. Army doctrine now defines this as the application of a process to achieve strategic goals (ends) "through the design, organization, integration and conduct of theatre strategies, campaigns, major operations and battles".<sup>49</sup> The studied application of operational art determines the time, location and purpose of force employment and indeed drives the decision to commit to battle. The benefits of an understanding of the operational art are akin to the benefits of reading a rule book before the game; while the conduct of operations is

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<sup>47</sup> FM 3-0, 2-2

<sup>48</sup> Ibid., 2-3

<sup>49</sup> Ibid.

not subject to finite rules, there is a benefit to beginning a game after one understands the rules which determine the winner. An understanding of operational art provides a commander with a clear vision of the conditions (rules) needed for victory before he begins the game. This vision, then, provides a framework for military activities and ensures that the multitudes of tasks needed to occur are all focused on a common end. Indeed, without the application of operational art “war would be a set of disconnected engagements with relative attrition the only measure of success”.<sup>50</sup>

Successful application of the operational art and function at the operational level requires commanders who can look beyond tactical immediacies and possess a clear vision of strategic endstate. It also requires continuous communications with higher commanders in order to ensure that their own activities do, in fact, support these end-states. As well, in a relatively fast-paced, opportunistic environment, the operational art requires a significant degree of mutual understanding, cohesion and trust. Finally, successfully applying the operational art requires commanders to answer four questions: 1) What military (or related political or social) conditions must be produced in the operational area (e.g. theatre) to achieve the strategic goal? 2) What sequence of actions is most likely to produce those conditions? 3) How should resources be applied to accomplish that sequence? Moreover, 4) What are the likely costs or risks in performing that sequence?<sup>51</sup>

While the U.S. Army may have been late to acknowledge the operational level of war and its art, the roots of both lie in the nineteenth century. To explain the roots of operational art it is necessary to fix them with one often seen as not the predecessor but antithesis of operational art: Antoine Henri Jomini. Jomini, a Swiss soldier of fortune, had served as Marshal Ney’s Chief of Staff during a portion of the Napoleonic Wars and had gone on to serve the Russian Tsar as a General in the Imperial Army. While in Russian service he would found the Nicholas Military

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<sup>50</sup> Ibid., 2-4

<sup>51</sup> Ibid., 2-5

Academy. His publication of *Precis de la Art de Guerre* in 1838 provides an enduring cornerstone of military education.

Jomini wrote to explain the phenomena of Napoleon's success. Writing during the early stages of the industrial revolution, Jomini was conscious of those who claimed the time portended a revolution in military affairs. Unlike some of his peers, however, he asserted that while armaments and tactics may change, notwithstanding "the new inventions of the last twenty years....strategy alone will remain unaltered".<sup>52</sup> Moreover, unlike his contemporary (Clausewitz), Jomini took a pragmatic view of war noting that all of war could be reduced to a few simple maxims. Chief among these maxims was one shared by Clausewitz that the fundamental principle of war lay in the requirement to "throw by strategic movements the mass of an army successively upon the decisive points" or, more simply "to maneuver to engage fractions of the hostile enemy with the bulk of one's own forces".<sup>53</sup>

The perceived failures of a strict spatial execution of Jominian thought led to further evolutions of operational thought. These next significant evolutions were primarily due to the efforts of a small group of Soviet theorists. These theorists were influenced by their observations of the failure of strictly spatial application of Jominian thought as evidenced in the 1904-05 Russo-Japanese War and World War I. During both conflicts, it became obvious that technology had influenced the battlefield and prior applications of the theories of war (e.g. Jomini) were no longer effective. Unlike the Napoleonic battlefields of Jomini's experience modern battlefields were increasingly lethal and expanding in space. Moreover, while armies and field formations continued to grow in size; the battlefields upon which they fought continued to empty. Thus, the problem became one of destruction. To put a finer point on it "How do you close with and destroy a force dispersed in time and space?" Following World War I the collective efforts of a number of Soviet theorists began to posit an answer to that question.

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<sup>52</sup> Jomini, 452

<sup>53</sup> Ibid., 461

The key members of this informal collective were Svechin, Frunze, Triandafillov and Tuchachevskii. Among them, perhaps the most balanced is Svechin. Following his experiences in the Russo-Japanese War, Svechin began to talk of a level of war between those acknowledged levels of strategy and tactics. Observing the absence of decisive battles in that conflict (and reinforced by experiences on World War I's eastern front) Svechin recognized that only in infrequent cases could one rely on achieving the ultimate goal of combat operations in a single battle. Indeed, as Svechin observed "now there are practically no battles: combat operations are fragmented in time and space into a number of separate battles"<sup>54</sup>. Given that, Svechin asserted that "the path to the ultimate goal is broken down into a series of operations".<sup>55</sup> Svechin opined that the operation ("operatsiia") would link together movement and combat and would provide an overarching purpose for tactical battles. Furthermore, the operation itself was a conglomerate of many other, subordinate actions such as planning, logistical support, concentration at start points, marching and fighting.<sup>56</sup>

The operation was itself contingent on successful application of the operational art which he defined as the "totality of maneuvers and battles in a given part of a theatre of military action directed toward the achievement of a common goal."<sup>57</sup> Thus, according to Svechin the only utility of "battle" is its role in supporting the larger operation, itself conducted of a series of related activities designed to achieve an even larger, strategic end. As well, those battles would not be fought simply to achieve the destruction of an enemy force. Flying in the face of a literal application of Jomini, battles would be fought not to attrit or destroy the enemy, rather to limit his maneuver options. Svechin's paradigm would see battles fought simply to allow friendly maneuver by limiting enemy maneuver. He rightly saw that given the rise of larger formations

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<sup>54</sup> Aleksandr A. Svechin, Strategy, Kent D. Lee, ed. (Minneapolis: East View Publications, 1992), 68

<sup>55</sup> Ibid.

<sup>56</sup> Svechin, 69

<sup>57</sup> A.A. Svechin in Jacob W. Kipp, Mass, Mobility and the Red Army's Road to Operational Art 1918-1936, (Ft. Leavenworth, KS: Command and General Staff College, Undated), 18

dissipated throughout ever-larger battlefields the path to destruction lay not in attrition, rather “...[the] only way to destroy an army is to cut off the arteries which supply it”.<sup>58</sup>

While the U.S. Army’s current understanding of operations is directly linked to the Soviet theorists (namely Svechin) this is not to say that the operational level of war and its art did not appear much earlier in its history. One author asserts that it first appeared during the American Civil War. In particular, this author notes General Grant’s plan for five separate operations in the spring of 1864 as marking the birth of modern operations.<sup>59</sup>

Vulcan’s Anvil: The American Civil War and the Emergence of The Operational Art lists seven criteria which characterize the operational art. First among them is the distributed operation. Defined as “an ensemble of deep maneuvers and distributed battles extended in time and space but unified by a common aim” the distributed operation forms the base element of operations.<sup>60</sup> In keeping with Svechin’s earlier assertion, the common aim which links them would focus on the retention or denial of freedom of action. A suite of distributed operations would result in the second of Schneider’s characteristics that of the distributed campaign. The distributed campaign would “integrate several simultaneous and successive distributed operations” and the resultant sum effect would exhaust the enemy.<sup>61</sup> That is, a number of seemingly separate actions (operations) would be conducted across the breadth and depth of the theatre all designed to preserve mobility of the attacking force while denying the enemy’s ability to do the same. The net result would be exhaustion of both options and available force.

Both distributed operations and the resultant distributed campaign would rely on Schneider’s next characteristic, that of continuous logistics. Large bodies of troops, spatially separated, would take advantage of the mobility advantage offered by the burgeoning railroad network to

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<sup>58</sup> Ibid., 260

<sup>59</sup> Schneider, James J. Vulcan’s Anvil: The American Civil War and the Emergence of The Operational Art. (Ft. Leavenworth, KS: School of Advanced Military Studies, 1991), passim

<sup>60</sup> Ibid., 39

<sup>61</sup> Ibid., 41

both move and resupply themselves. Operational maneuver would no longer be tied to a series of fixed depots or magazines as they were in Napoleon's era. Modern operations would be supported by a railroad system that allowed the movement of supplies to anywhere they were needed. The railroad allowed maneuver to drive logistics rather than the classic paradigm of supply driving maneuver. Indeed, Schneider posits the analogy of the railroad functioning as a giant "electric grid" to which an army could "plug in" to be recharged with supplies.<sup>62</sup> Thus, the pauses which characterised military operations in Jominian and even Soviet thought would ever be shortened and the tempo of operations could be increased to reinforce the tendency of distributed campaigns to exhaust an opponent.

Gone were the days where a general could observe the entire battlefield from single point and exercise personal control of his units. In operations, the dispersed, distributed nature of the battlefield would be enabled by fourth of Schneider's characteristics: instantaneous command and control. Using the telegraph (developed along with, and because of, the railroad) commanders would be able to exercise effective command of forces distributed across the theatre. This was not simply a tool to replicate the level of personal control previously excercised by Napoleonic marshals. The new paradigm was one of commanders operating with a clear understanding of the overarching aim of the campaign being able to use a modern communications system to inform higher, and subordinate commanders of the opportunities presented by distributed operations.<sup>63</sup> Thus, the telegraph would allow commanders to continuously coordinate their actions with higher headquarters and adjacent units. The sum total would allow the distributed operations to remain continuously linked to a common purpose, aim and operating picture.

Both sides entered the war with an officer corps grounded in Napoleonic theory. In this model, the largest formation was the vaunted "Corps d'Armee". Schneider notes the rise of larger formations creating what he observes as the next of his characteristics: the operationally

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<sup>62</sup> Ibid., 47

<sup>63</sup> Ibid., 54

durable formation. Defined as “formations capable of conducting indefinitely a succession of distributed operations” he provides the example of the field army and, in Grant’s model, the army group as being the example of just such a formation.<sup>64</sup> However, the size or headquarters is less important as the unit’s capabilities. Operationally durable formations must have organic combat and support capabilities to allow them to operate separately from their parent unit in order to conduct relatively independent distributed operations. The operationally durable formation would do just that and facilitate distributed operations and distributed campaigns.

Dispersed operations, would as Schneider notes, place increasing demands on commanders. Those commanders, now directing widely separated forces, would need to rely on what Schneider calls “operational vision”. Defined as “that intuitive ability to render incomplete and ambiguous information into a meaningful impression of the true state of affairs in their theatre of operations” it would allow commanders to act proactively to both create opportunities and, in view of the possibilities inherent in a modern communications system, allow them to quickly exploit opportunities.<sup>65</sup> This vision was not just a function of the commander; rather staffs would have to develop to allow a commander to maintain a constant, near “real time” understanding of his own force relative to the enemy and terrain. Simplifying the matter somewhat was the fact that another characteristic was that operations would be executed against a distributed enemy, the next of Schneider’s characteristics. Quite simply, to execute distributed operations, you need to have a symmetrical enemy. You must be opposed by an enemy capable of distributing himself as you yourself distribute. The enemy must, as he points out, function as “the stone...upon which to work the chisel of distributed operations”.<sup>66</sup>

The enemy himself will be distributed differently in the new paradigm; whereas the classical model could feature localized forces in some manner divorced from the need to protect terrain,

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<sup>64</sup> Ibid., 55

<sup>65</sup> Ibid., 58

<sup>66</sup> Ibid., 62

Schneider's paradigm posits that the last feature to characterize operations would be distributed deployment. Forces would be forced to disperse out of a need to protect those features that promote their supply and movement. Examples would include key supply centers, railroads and production centers. As the only utility of battle is to promote movement, forces must be dedicated to protecting those locales integral to their ability to move and remain viable.

In conclusion, while the theories of Jomini were adequate to explain the theory of Napoleonic success they were inadequate to provide theories to allow success on the new, industrial age battlefield. Industrial age developments namely the rifled musket and its increased range, railroads and the telegraph all allowed larger formations to dissipate throughout a battlefield of ever increasing size. The strategy of the single point was rapidly losing its relevance. But what theory could explain the success of those activities that were successful in the Civil War? After the fact it can be said that General Grant's success lay in his application of what we now know to be the operational art. By conducting distributed operations within the common aim of distributed campaign, Grant was able to exhaust the Confederacy's options and, ultimately, cause its military collapse. Was there, though, an earlier example afforded by the American Civil War? Could the application of those characteristics as outlined in Vulcan's Anvil to General Lee's design and execution of the Gettysburg Campaign show evidence the actual birth of operations occurred a year before that date proposed by that work's author?

## Analysis

***Does the Gettysburg Campaign represent the application of operational vision that resulted in distributed operations as part of a distributed campaign?***

Breaking with Dr. Schneider's sequence of characteristics the first issue to analyze combines three of his characteristics into one criterion. I do this because, as logically as he presents his characteristics it is perhaps more logical to link three of them under the aegis of one, overarching thought. Operational vision, which he notes as of importance in execution, is perhaps just as

important in the planning of operations. Only with a commonly held vision of the current and proposed strategic and operational endstates can one truly plan an effective campaign. Only with this understanding of common aim (resident in campaign design), can one plan distributed operations. Thus, operational vision results in operational campaign that in turn is a product of successful distributed operations. Analysis reveals that while Lee possessed the requisite operational vision, it was not shared by his civilian leaders. Moreover, while Lee designed a distributed operation, he did not possess the command authority to combine this operation with others in order to result in a distributed campaign. Indeed, under the operational paradigm, what has been historically titled “The Gettysburg Campaign” should more correctly be known as “The Gettysburg Operation”.

While historians debate the relative strengths or weaknesses of each side, a significant weakness for the Confederacy was the lack of common operational vision. While most agree that the Confederacy’s strategy was to wear down the Union’s will to fight and thus gain recognition of their independence; few agreed on the operational means to that end.<sup>67</sup> Many authors agree with historian Michael A. Palmer who notes, perhaps simplistically, that while Jefferson Davis favored an operational approach of attrition, Robert E. Lee favored an annihilationist approach.<sup>68</sup> An examination of the record shows that both, at different times, favored a combination of these approaches. The larger issue is that not satisfied with setting strategic policy, Jefferson Davis (who with military experience and having served as the United States’ Secretary of War) continually had a very “hands on” involvement with operational matters.

Davis’ over-riding tendency was to favor a general distribution of troops across the south. As a result, Confederate forces were spread from Galveston, Texas to the Virginia coast and almost all points in between. Davis’ approach was to apportion troops to Department Commanders and

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<sup>67</sup> Author: Compounding this are authors not conversant with military theory who author books on “Confederate *strategy*” when they are really discussing operational issues.

<sup>68</sup> Michael A. Palmer, Lee Moves North: Robert E. Lee on the Offensive from Antietam to Gettysburg to Bristoe Station. (New York: John Wiley & Sons, 1998), 125-127

by changing the definition of the departmental boundaries, Davis would give authority to these Commanders to move forces within their boundaries as they saw fit. Thus, as Jones rightly points out, Davis gave away operational flexibility.<sup>69</sup>

The Confederacy had no strategic or operational reserve. Every inch of the Confederacy was owned by a geographically defined Department Commander; thus all forces were commanded by someone other than Davis. In theory while Davis, as President of the Confederacy, ostensibly had command authority over all Confederate forces, the reality was somewhat different. Davis dealt with opposition to any concentration from many different sources. The first source, perhaps not surprisingly, came from his generals. Department Commanders were loath to give up any of their troops, for any reason. Some commanders wedded to the idea of defending every inch of Confederate territory, would staunchly resist any efforts to concentrate. Even General Joseph Johnston would continue to press for a more or less even distribution of forces saying to Gen. T.J. “Stonewall” Jackson: “I am an enemy to much concentration of troops”<sup>70</sup>.

There were some real constraints that led to the Confederacy’s adoption of such a de-facto operational approach. First, political considerations constrained Davis’ actions. Given the need to promote the image of a central government that was actively protecting all of its territory, a move of any force away from any area was seen as a precursor to its abandonment to the enemy. Indeed, as Lee was fighting to draw forces from coastal defenses, Davis was receiving calls from local citizens which stridently opposed any such move. One such letter, this from the citizens of Charleston, South Carolina, requested Davis suspend any troop movements for at least five to six months because “enemy land movements are threatening”.<sup>71</sup>

On the other hand Lee did evidence operational vision in both planning and execution. His

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<sup>69</sup> Archer Jones, Confederate Strategy: From Shiloh to Vicksburg, (Baton Rouge: Louisiana State University Press, 1961), 230: While Jones actually terms it “strategic” flexibility, I have substituted the term “operational” to maintain consistency with current Army doctrine.

<sup>70</sup> Joseph T Glatthaar, Partners in Command, (New York: The Free Press, 1994), 110

<sup>71</sup> Davis Papers, 181

planning for the campaign provides evidence of this vision. Lee knew very well the relationship between the need to disperse and concentrate in relationship to the Confederacy's situation.

While undoubtedly Jominian based, Lee's understanding appeared in a letter to Davis prior to the campaign when Lee noted that "it is impossible for [the enemy] to have a large operating force at every available point in our territory as it is for us to keep one to defend it. We must move our troops from point to point as required....".<sup>72</sup> Thus, Lee saw that a classic cordon would not be effective. Instead, he saw the need to mass effects on decisive points while other points were left unattended or were the focus of supporting efforts or economy of force missions. During the campaign Lee again stressed a policy of concentration. In another letter to Davis he justly observed that "It seems to me we cannot afford to keep our troops awaiting possible movements of the enemy but that our true policy is as far as we can, to employ our own forces to give occupation to his at points of our own selection."<sup>73</sup> Lee saw the operational situation as it was; the South's territory was too vast and a classic cordon defense to protect it would only lead to disaster stemming from culmination due to ever-increasing Union pressure.

During the campaign Lee demonstrated his ability to conduct distributed operations. Throughout the campaign Lee was not just maneuvering the Army of Northern Virginia; he was also directing Confederate activities in Western Virginia and those in support of the defense of Richmond. Moreover, as he did maneuver the Army of Northern Virginia, the movement of his corps show him attuned to the need to distribute forces spatially. The latter, example, however must be noted with some significant caveats (which will be discussed later).

The Gettysburg Campaign was not simply fought with the main body of the Army of Northern Virginia; Lee also planned and directed efforts in Western Virginia and the Shenandoah Valley to directly support his main effort, the Army of Northern Virginia proper. While the movement of Gen. Samuel Jones into the Kanawha Valley of West Virginia has already been noted; it is

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<sup>72</sup> Lee in Command, 415

<sup>73</sup> OR, Ser. I Vol. XXVII, Pt. III, 924

worthy of emphasis to note that Lee would continue to direct Jones' activities throughout the campaign. In June, as the Army of Northern Virginia made its approach he ordered Jones to "meet any movements that may be made by the enemy from northwest Virginia".<sup>74</sup> Lee used Jones, in effect, as an operational covering force to protect the movement of his main body. Later in the campaign (20 June) expanded Jones' original orders and directed him to "threaten West Virginia" and, if to do nothing else, "prevent the troops in that region from being sent to reinforce other points".<sup>75</sup>

Two other forces were used separate of the main body as well. Recognizing the importance of the Shenandoah Valley to the Army's movement security and sustainment; Lee ordered Generals Imboden and Jenkins (both commanding cavalry brigades) into the Valley prior to beginning his main body movement. Imboden, as noted previously, was ordered to Northwestern Virginia both to disrupt Union movements and gather supplies and recruits. Jenkins was to conduct reconnaissance to determine enemy positions and strengths at a number of dispersed locations stretching from Winchester to Martinsburg and on to Charleston (West Virginia).<sup>76</sup> As well, Lee continued to direct General Elzey's efforts to defend Richmond (and thus protect his key industrial supply center) throughout the Campaign.<sup>77</sup>

Moreover, Lee moved the Army of Northern Virginia in a distributed manner. Once in the relatively open terrain of western Maryland and south-central Pennsylvania his corps were spread over a front of 15 miles wide and, just prior to concentration on 29-30 June, a depth of almost 45 miles. Moreover, two of those corps were assigned distributed (deep) objectives aimed at the denial of Union freedom of maneuver. As noted earlier, Ewell was directed to advance on Harrisburg (key communications and transportation node) while Hill was to advance south of

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<sup>74</sup> Louis H. Manarin, Lee in Command: Strategical and Tactical Policies, (Durham, NC: Duke University, 1964), 451

<sup>75</sup> OR, Ser. I Vol. XXVII, Pt. III, 906

<sup>76</sup> Ibid., 866

<sup>77</sup> Ibid., 892

Harrisburg and cut the important Philadelphia-Harrisburg railroad link. While not reflected in the their orders as now reflected in the Official Records, one could justifiably state that at least some of the rationale for their spatial separation was a need to provide an appropriate front for foraging and supply requisitions. Nonetheless, the extant orders assigned them clearly gave them objectives deep in enemy territory.

Lee fought his Army in a distributed manner. Indeed, Lee's plan for attack on the second and third days can be seen as a precursor for later Soviet thought regarding deep operations. Both Tuchachevskii and Triandafilov would stress the need for forces to act in concert to fix enemy forces and free others to maneuver. Lee's use of Longstreet's Corps artillery and Ewell's infantry to isolate the Union left on the second day can be seen (albeit on a smaller scale than intended) as comparable to the tenets of "operational containment" espoused by Tuchachevskii. This containment designed to contain "an enemy force beyond the...main thrust" in order to deny the enemy the ability to transfer "even a portion of his forces in the direction of the main effort."<sup>78</sup>

As well, Lee's use of his army-level cavalry can be seen as a precursor of what the Soviet theorists would later term deep attack. For cavalry in particular, the Soviets would note the importance of its use widely separated from the main body but executing tasks integral to the success of the operation.<sup>79</sup> Foreshadowing of this can be seen in both approach and battle phases of the campaign. During the approach Stuart's cavalry was employed separate from the main body (whether by design or circumstance) and would operate deep in the enemy's rear for almost ten days. Thus, his force provided a credible threat to the safety of Washington and limited the Union's ability to strip the city of its defenders to reinforce the Army of the Potomac. During the third day, Stuart would move miles to the Union rear and work in concert with the Army's main body to expand the battlefield in both space and time. Both uses foreshadow the works of the

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<sup>78</sup> Tuchachevskii, Mikhail. New Problems in Warfare. (Ft. Leavenworth, KS: School of Advanced Military Studies, 1992), 5

<sup>79</sup> Triandafilov, Vladimir. The Nature of the Operations of Modern Armies. Jacob W. Kipp, ed. (Portland, OR: Frank Cass & Co., 1994), 152-153:

twentieth century Soviet theorists who advocated the use of mobile formations to strike deep in the enemy's rear to disrupt, interdict and fix. However, unlike the more conventional "raid" these operations, while spatially separated, are conducted as just one element in a holistic application of force across the breadth and depth of the battlefield.

Thus, in contrast to common thought, we see that during the campaign Lee was directing operations spatially separated (over a 150-200 mile front) but cognitively linked. These were true distributed operations. However, Lee could not combine these operations with others outside his direct span of control and execute a distributed campaign. While he recommended at least two such operations, neither recommendation was adopted. As a result, while the Army of Northern Virginia's campaign should be seen as a distributed operation; the Confederacy did not execute a distributed campaign.

The first of these operations was one Lee continually stressed both before and during the campaign. Indeed, after the war, Lee would again note the possible benefits of this operation had it been adopted. Essentially, Lee wanted to assemble a force under the command of General Beauregard (then commanding the Department of South Carolina, Georgia and Florida) and use it to execute another operation which would enhance that of the Army of Northern Virginia. Noting the lack of a requirement for the numbers then dedicated to coastal defense, Lee first recommended that this force either be sent to reinforce Johnston in Mississippi or reinforce his own Army of Northern Virginia. If they were they not, and simply left to man coastal fortifications, Lee justifiably noted that "their services will be lost to the country and they will become a prey to disease".<sup>80</sup> Later correspondence would again push for the adoption of this force. In a letter to President Davis on 23 June, Lee strongly recommended that this force be "pushed forward to Culpeper Courthouse threatening Washington from that direction" in order to provide a diversion and relieve pressure on Richmond.<sup>81</sup> In a post-war interview Lee would again

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<sup>80</sup> OR, Ser. I, Vol. XXVII, Pt. I, 294

<sup>81</sup> OR, Ser. I, Vol. XXVII, Pt. III, 924-25

emphasize the contributions Beauregard could have made and his regret that such a force was not used; while he did not expect more than a demonstration it “would have been a great diversion.”<sup>82</sup>

The second recommended operation was a move by either General Buckner (in Kentucky) or Bragg (Middle Tennessee) against Union forces in Ohio and/or Kentucky. First mention of these possibilities came late in June upon hearing of the recall of Union forces in the Carolinas and Kentucky. Noting this, Lee wrote the Davis observing that “this should liberate troops in the Carolinas and enable Generals Buckner and Bragg to accomplish something in Ohio”<sup>83</sup> A second missive would provide another option: Confederate forces in West Virginia (e.g. Jones) and Kentucky (Buckner) could cooperate for an offensive in Ohio. Lee noted this possibility and observed the impact it could have to either gain needed supplies or prevent the use of Union forces against either his Army or that in Mississippi.<sup>84</sup> Unfortunately, neither was adopted. Jones would complain that he was already over-committed. Neither Buckner nor Bragg commented on the plan if indeed they were ever apprised of it. President Davis, if he agreed with the plan or saw the effect these operations could have when coupled with Lee’s Gettysburg operation, certainly did not direct their adoption. In fact on 29 June as Lee was about to make contact with the Army of the Potomac, Davis could only plaintively correspond with Jones directly to ask if he had received Lee’s letter recommending his coordinated operations with Buckner and ask “had you any other plan, or do other operations suggest themselves to you?”<sup>85</sup>

In conclusion, while Lee possessed operational vision and was able to design and conduct distributed operations; those same abilities were not seen in others with decision-making authority. As a result, while opportunities presented themselves for the creation and execution of a distributed campaign, none were adopted.

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<sup>82</sup> William Allan, “Memoranda of Conversations with General Robert E. Lee” in *Lee The Soldier*, Gary Gallagher ed., (Lincoln, NE: University of Nebraska Press, 1996), 18

<sup>83</sup> *OR*, Ser. I, Vol. XXVII, Pt. III, 930-31

<sup>84</sup> *Ibid.*, 932

<sup>85</sup> *Ibid.*, 945

### *Was the Gettysburg Campaign supported by Continuous Logistics?*

The new paradigm of distributed operations within a distributed campaign are only enabled by continuous logistics. As Svechin observes “if lines of communications are functioning poorly, then an operation will suffocate”.<sup>86</sup> Lines of communication as defined in current U.S. Army doctrine connect the Army with its sustainment base; along them flow supplies, personnel, equipment...the lifeblood of an operational force.

While the importance of logistics has been a constant in military history, its criticality became evident only with the evidenced importance of industrial warfare’s new technologies. The support of operations, or “operational” logistics (as opposed to tactical support) is very much an example of the total being greater than the sum of its constituent parts. Simply stated, at the operational level there is more to logistics than having enough to feed your soldiers on a daily basis. Operational logistics is a system of supply and distribution managed to provide continuous support and allowing units to rest confident in the ability of the army to sustain operations throughout the campaign. Such a system was not a feature of the Confederacy’s Gettysburg Campaign. While supplies were gathered during the campaign (the accounts of private soldiers often note the richness of the countryside) they did not translate into an ability to provide continuous logistics largely because the transportation and management systems of the Army did not allow it. While Lee may have applied operational vision to create a distributed operation, the failure or culmination of this operation could be justifiably attributed to its lack of support. Analysis reveals that Army of Northern Virginia began the Gettysburg Campaign in poor shape logistically and with an inadequate transportation and distribution system once in Union territory was unable to sustain it.

The Confederacy was in poor shape logistically in the spring of 1863. As Lee began his approach to Pennsylvania, the Commissary General provided a dismal overview of their status to

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<sup>86</sup> Svechin, 260

President Davis. Among other failings, he noted the severe lack of food due to the Confederacy's inability to move Texas cattle across the Mississippi and the failure to be able to move the "reserve" cattle (designed to be used as the government saw fit) from Atlanta to Virginia because General Johnston feared that if it left his department none would be provided to his forces. Moreover, the promised imports from Europe had fallen short of expected quantities and only provided "a few mouthfuls".<sup>87</sup> It was this shortage that spurred his recommendation that the daily meat ration for those on active service be reduced to ½ lb. per day, an amount he felt entirely adequate noting that "the condition of the troops, that is health and appearance, proves it is enough."<sup>88</sup>

Those within the Army noticed the supply problems as well. Lee would continue to correspond with President Davis, General Josiah Gorgas (the Confederacy's Chief of Ordnance) and others to bring these issues to their attention. In an overall assessment in April 1863, Lee stated that "...I feel by no means strong, and from the conditions of our horses and the amount of our supplies, I am unable even to act on the defensive as vigorously as circumstances may require."<sup>89</sup> To Gorgas he would write after inspecting Stuart's cavalry and complain of both the saddles and their Richmond manufactured carbines claiming that "The former ruined the horses backs and the latter were so defective as to be demoralizing to the men."<sup>90</sup> Indeed, the situation was so bad within the army that by General Order, Surgeons were required to remove, appraise and turn in for reissue the clothing removed from dead soldiers.<sup>91</sup>

Of course, these various letters both within and without the army were not telling anyone anything they did not already know. The supply shortages in the army were widely

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<sup>87</sup> OR Supplement, 574-575

<sup>88</sup> Ibid.

<sup>89</sup> Robert U. Johnson ed., Battles and Leaders of the Civil War Volume 3, (New York: Century Press, 1884-88), 233

<sup>90</sup> OR, Ser. I Vol. XXVII, Pt. III, 873

<sup>91</sup> Ibid., 511

acknowledged and had been an area of emphasis within the Confederate Government.

Unfortunately, few supported these reforms.

The opposition revolved around the scope of the central government's authority; given a premise of states' rights for the formation of the "confederacy" (vice "republic") few would allow the Confederate Government the authority it needed to centralize functions of a national sustaining base. Various measures had been attempted. In 1863 the government had attempted to regulate crops so as to ensure that production matched requirements. While widely ignored, it was also opposed by many who questioned the "constitutionality" of the policy.<sup>92</sup> Government purchasing agents were met with even more opposition. These agents, who would pay "market value" far below the inflated prices to be gained in larger Southern Cities, were violently resisted and vilified as perpetrators of "lawless outrages".<sup>93</sup> Finally, as approved means of remedying the situation proved ineffective, soldiers throughout the countryside were not above taking matters into their own hands. Governor Zebulon Vance of North Carolina angrily claimed that "...if God almighty had yet in store another plague, worse than all the others which he intended to let loose on the Egyptians...I'm sure it must have been a regiment or so of half-armed, half-disciplined confederate cavalry."<sup>94</sup>

Given then the poor state of affairs at the start of the campaign, the situation did not get much better throughout the campaign. Two weeks after its start, Lee would write Davis of his concerns stating that "the difficulty of supplies retards and renders more uncertain our future movements."<sup>95</sup> The next week the situation would brighten somewhat as the van of the Army (Ewell's Corps) crossed into Maryland. Confederate purchase agents purchased food and other supplies, but due to lack of a developed distribution system, Ewell's Corps were likely the only

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<sup>92</sup> Ibid, 489: The issue was one raised by Florida Governor John Milton in a 15 April 1863 letter to President Davis.

<sup>93</sup> Davis Papers, 182

<sup>94</sup> OR, Ser. IV, Pt. 2, 1061

<sup>95</sup> OR, Ser. I, Vol. XXVII, Pt. I, 296

immediate beneficiaries.<sup>96</sup> While Lee's units were successfully living off the land, the larger issues of operational supply began to evidence themselves. One of those issues is the lack of rail network to support the transportation and distribution of supplies.

Throughout the war, both sides would use rail extensively to support the movement of troops and supplies. Unfortunately, the Confederacy's rail network (already at a relative disadvantage) was less than optimized in the spring of 1863. On behalf of the Confederacy's railroad presidents (then convened to seek a solution to the railroad network's shortcomings) one William Wadley would report the dismal state of the Confederacy's railroads in a letter to Secretary of War Seddon in April 1863. Wadley noted among other things a shortage of 31 engines and 930 cars and urged "prompt action looking to a restoration of the principle roads in the country".<sup>97</sup> The corrective action recommended by these collected presidents was extensive but hardly comprehensive. Among other issues they recommended the construction of increased storage facilities, the importation of skilled labor from Europe to man the roads, and a massed gathering of all scrap iron throughout the south to allow the manufacture of parts badly needed to repair rolling stock.<sup>98</sup> Noticeable in its absence was a recommendation to appoint a central government superintendent of rails. While Lee had recommended the appointment of such an official, no such appointment was made.<sup>99</sup> As a result, there was no central governmental control of the existing railroad system; civilian ownership (with competing demands for profit) would not allow the tailored, operational use of the railroads to allow the required degree of operational support.

Thus, Lee began the campaign from a poor logistical posture and could not even be resupplied effectively by rail up to the full extent of his own rail network which ended at Winchester, Virginia. The transportation situation would worsen once in Maryland and

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<sup>96</sup> Ibid, 297-298: Lee reports that by 23 June "we have collected sufficient north of the river to supply Ewell's Corps until 30 June".

<sup>97</sup> OR, Ser. IV, Vol. 2, 485

<sup>98</sup> Ibid., 500-505: The letter containing the recommendations was written by one P.V. Daniel Jr. who was writing on behalf of the other railroad presidents.

<sup>99</sup> Manarin, 417

Pennsylvania. While the rail network there was more extensive and better maintained, it could not be used by Southern rolling stock. Lack of standard rail gauges mean that one company's rails could not be used by another company's stock. As a result, Lee was forced to depend on horse-drawn wagons for supply north of the Potomac.

These ponderous wagon trains provided their own problems. Most significant among them was the number of horses needed to drive them; horses which the Army of Northern Virginia was fearfully short of. Lee, in an attempt to reduce the demand for horses, had attempted throughout the spring of 1863 to reduce his baggage train. Even so one source estimates that Lee would likely have crossed the Potomac with at least 2950 wagons to move only their relatively meager organic supplies.<sup>100</sup> They would hardly have horses needed to pull additional wagons loaded with requisitioned supplies to sustain the army continually. Another problem was the need to secure them; such an extensive wagon train required continuous protection. As evidence of this need, with Lee's lead elements in contact with the Army of the Potomac, an entire Division was dedicated to the protection of the Army's trains. Indeed, the manpower needed to properly secure the extensive communications of a modern, operational force became so intense that Lee regretfully realized that "I have not sufficient troops to guard my communications and therefore have to abandon them".<sup>101</sup>

On the other hand, the benefits of rail are self-evident. First, an army is relieved of the need for horsepower intensive wagon trains and is able to dedicate more horses to its cavalry (later described as having unique applicability in the operational paradigm). As well, fewer troops are needed to operate rail (trained civilian specialists can be used) and fewer are needed to guard it. Most significantly though, the use of rail allows the maneuver force to move where it will and rest assured that with a few remote exceptions, supplies can reach them.

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<sup>100</sup> Edward Hagerman, The American Civil War and the Origins of Modern Warfare, (Bloomington: Indiana University Press, 1988), 138

<sup>101</sup> Palmer, 59-60

In conclusion, the Gettysburg Campaign was not supported by continuous logistics. Indeed, if any element or area of the campaign represents the classical paradigm it is Confederate logistics. Not to belabor the point, but the Army of Northern Virginia executed an operational campaign without the benefit of the supplies needed to ensure its support. The supplies were not on hand prior to the campaign's initiation (indeed, many would say this simple issue is the campaign's *raison d'être*), and while some could be gathered during the campaign, none could be moved in an efficient means to allow the Army's continuous support.

### ***Did the Gettysburg Campaign take advantageous of instantaneous Command and Control?***

Confederate forces during the Gettysburg Campaign fought many enemies throughout the operation. Among the most significant was the friction all too often an element in any combat. Reducing this friction is reliant on effective command and control. For the purpose of analysis against Schneider's criteria, instantaneous command and control is a function of communications with higher and subordinate headquarters. Of particular emphasis is the means of this communication; the level to which the Army of Northern Virginia leveraged emerging signal technologies to facilitate distributed operations. Analysis reveals that Lee did not communicate effectively with his higher headquarters; neither did his subordinates communicate effectively with him. This failure (directly linked to the tactical failures of his Corps' on each of the battle's three days) was a result of a lack of understanding of the operations' purpose, poor staff work and a failure to use emerging signals technologies to their greatest available extent.

The roots of the inability to provide instantaneous command and control is found in Lee's failure to communicate effectively with the Confederacy's President and Secretary of War. Indeed, there is evidence that as late as 31 May (two weeks following Davis' approval of the plan) the President wrote to Lee stating "I had never fairly comprehended your views and purposes until the receipt of your letter of yesterday..."<sup>102</sup> Moreover, Lee did not communicate

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<sup>102</sup> Davis Papers, 201

well with Davis during the Campaign. Existing records reveal only eight reports from Lee to Davis from 4 June to 4 July; nothing at all survives from the period 28 June until 4 July.<sup>103</sup> The new paradigm of distributed maneuver requires close coordination between an operational commander and his strategic authorities; only with this coordination (facilitated by communications) can both levels of command truly craft operations which support desired strategic objectives. As relates to the Confederacy in particular, this communication is of particular emphasis because Davis was the single overall military commander in the Confederacy. Lacking a single “General in Chief” to coordinate the Confederacy’s military operations, only Davis possessed the authority to coordinate distributed operations into a distributed campaign.

Lee did not communicate well with his subordinates. To begin, Lee likely had no formal plan for the campaign.<sup>104</sup> Thus, without providing an overarching plan and corresponding intent; his subordinates were poorly prepared to recognize and take advantage of opportunities as they were presented. Perhaps the most striking example is Ewell’s failure to grasp the immediate need to seize or isolate Cemetery Hill on 1 July. While, as previously noted, there were tactical difficulties with such an attack on a position, if not fortified, then certainly strongly held, there is no evidence to suggest that Ewell ever recommended a coordinated move with Hill’s Corps to isolate the Union position by blocking roads and routes south of Gettysburg in order to interdict the move of Union reinforcements. Such routes (namely the Taneytown and Baltimore Roads) were critical to the Army of the Potomac and allowed its reinforcement throughout the night of the 1<sup>st</sup> and morning of the 2d of July. Had Ewell been provided with the benefit of knowing or understanding Lee’s purpose and corresponding intent the situation could have been different. In stark contrast to Grant’s orders to Sherman the following year, there is no existing plan which explained the purpose of the various operations planned by him. As Palmer correctly concludes,

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<sup>103</sup> Author: While some correspondence may have been destroyed either during or after the War no “missing” correspondence is alluded to in any of the extant correspondence.

<sup>104</sup> Palmer, 65

Gettysburg was a campaign of improvisation and while executing a poorly understood plan Lee's subordinates were unable to recognize opportunities presented by their distributed maneuvers.<sup>105</sup>

Complicating the issue is the style in which Lee communicated his orders. First, Lee, like Jackson, seemed uncomfortable with a "council of war". Instead, throughout the Battle he would meet with commanders individually. Coddington notes that Lee held no such council prior to the evening of 3 July.<sup>106</sup> Without a common understanding of supporting purposes it is little wonder that Lee would note the failure of coordinated action in his various post-battle reports. Next, his "one on one" style was not timely. As an example, Lee did not meet with Longstreet after the second day's battle.<sup>107</sup> Thus, Longstreet's activities on the morning of 3 July (e.g. his preparations for an envelopment around the south of Big Round Top) can justly be seen not as the result of the pique of an uncooperative commander, but as the actions of a commander who did not receive appropriate timely orders and intent. Other orders (when issued) lacked adequate detail. In contrast to the detailed orders for the approach, orders while in contact were marked by a lack of detail. Of note is Lee's order to Ewell on 29 June ordering him to "march on Cashtown or Gettysburg according to circumstances".<sup>108</sup> Upon receipt, according to General Trimble, Ewell read the order several times complaining of the order's "indefinite phraseology".<sup>109</sup> Indeed, Ewell had a valid complaint; what were the circumstances that would cause him to march on either of the two objectives? Were the circumstances driven by enemy or friendly force dispositions? Were those same circumstances determined by a need to destroy an opposing enemy or secure terrain that would deny enemy freedom of movement while promoting friendly mobility? A reading of Lee's order reveals no such determination.

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<sup>105</sup> Ibid.

<sup>106</sup> Coddington, 363: One source does note that Lee apparently met with at least two Corps Commanders on 24 June.

<sup>107</sup> Ibid., 465

<sup>108</sup> OR Supplement, Vol. IV, 437-438

<sup>109</sup> Ibid.

The failures to communicate effectively are also found in the failures in the means used to communicate. Two critical means which enable instantaneous communications noticeably fail Lee throughout the campaign: trained, professional staff officers and modern communications systems. Neither worked to Lee's advantage in the campaign.

In a post-battle account, one of the Army of Northern Virginia's officers would complain about the lack of staff support and observe that "...scarcely any of our generals had half of what they needed to keep a constant and close supervision on the execution of important orders".<sup>110</sup> Lee would echo this complaint in a letter to the President in March of 1863. Urging the adoption of a professional general staff on the French model, Lee justified such a staff claiming that "the greatest difficulty I find is in causing orders and regulations to be obeyed."<sup>111</sup> In a letter on the same subject to the Chairman of the Senate's Committee on Military Affairs Lee dictated the formations of professional staffs down to the Brigade level. These staffs, as Lee saw it, would provide a commander with a chief of staff (of general officer rank) as well as professional quartermaster, ordnance, inspector general, and medical officers. As Lee concluded if these positions were filled "...with proper officers, not the relatives and social friends of the commanders, [who are] not always the most useful, you might hope to have the finest army in the world."<sup>112</sup> Unfortunately, Lee's staff would not prove equal to the task at hand. Noted for its simplicity and meagerness, Lee's staff did not allow the ready relay of orders and instructions to his subordinates, sometimes to their frustration. In the aforementioned episode of Ewell receiving Lee's instructions for the advance of 30 June, the former went on to angrily ask "Why can't a commanding officer have someone on his staff who can write an intelligible order?".<sup>113</sup>

Even without a formed, trained staff in appropriate numbers and ranks, Lee did not use his existing assets to allow an extension of his command and supervise the execution of his orders.

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<sup>110</sup> Coddington, 380: Attributed to then Colonel E.P. Alexander.

<sup>111</sup> OR, Ser.IV Vol. 2, 447-448.

<sup>112</sup> Ibid., 448

<sup>113</sup> OR Supplement, Vol. 2, 438

Meade's ability to do this stands in contrast to Lee's lack of this use. Meade used deputies throughout the Battle. For instance, on 1 July he would place all forces under a "wing" commander in order to allow unity of command and unity of effort. This wing commander, initially General Reynolds, would later become General Hancock. Meade remained in his headquarters by the telegraph while Hancock, as his representative, fought the tactical battle and kept him informed. The same relationship would be seen on the second day. Noting the confused nature of the swirling tactical fight on the Union's left flank, Meade dispatched Hancock to assume command of all Union forces on that flank while he maintained his headquarters in the Leister house in order to remain abreast of the larger situation. This use of subordinate commanders, unlike Napoleon's use of junior aides as "directed telescopes" to simply keep abreast of the tactical situation, represented a means for the operational commander to extend his command in depth. That is, the use of forward positioned commanders, resourced with the requisite level of authority, allowed the operational commander to exercise command throughout the battlefield thereby extending the scope of his control.

Finally, the Army of Northern Virginia did not have a modern signals system that allowed them to leverage the advantages of the telegraph. While the Confederacy developed a Signal Corps in 1862, they had not the means to allow the use of the telegraph outside of existing lines. Wire and operator shortages would plague the nascent signal corps and limit its effectiveness. Thus, throughout the campaign the Army would rely almost exclusively upon couriers and face to face communications.<sup>114</sup> Couriers were established as the primary means of communication as early as 5 June; Lee specifying to Hill that this of couriers, then extending to Culpeper Courthouse, would be used as the primary means of communications between their respective

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<sup>114</sup> Hagerman, 146

headquarters.<sup>115</sup> Other surviving reports lead to the conclusion that couriers were used almost exclusively by Lee's other commanders as well.<sup>116</sup>

In contrast, their opposing Union forces would use the telegraph to great advantage. The Union Signal Corps (and its mobile Beardslee Field Telegraph) moved along with the Army to ensure communications between Corps headquarters, and, importantly, between the Army and its Washington Headquarters. By 2 July, Union signalers had emplaced operational telegraph communications up to Emmitsburg.<sup>117</sup> Moreover, because the Army's experience with the new technology had been that "...it is found that telegraphic communications fail when it is most needed" other means were used to facilitate effective, instantaneous communications.<sup>118</sup> Tactical signal stations established on Little Round Top performed yeoman service throughout the battle and a constant stream of reports from 2-4 July kept Meade well apprised of enemy activities to his front.

In conclusion, the Army of Northern Virginia was not the beneficiary of instantaneous command and control during the campaign. Lee did not communicate effectively, in substance or form, with his higher headquarters and subordinate commanders. His intent and structure for the campaign were not understood before the campaign. During the campaign the effects of this would be compounded as he did not communicate effectively with his subordinates. Beyond the inadequacies of the content of his communications, the Army of Northern Virginia was hampered by the inadequacies of their means of communications. The lack of a professional, trained staff in sufficient numbers prevented their use to supervise and coordinate orders and the lack of modern technologies (e.g. telegraph) caused the reliance on classical courier communications to support a modern distributed operation.

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<sup>115</sup> OR, Ser. I, Vol. XXVII, Pt. 3, 859

<sup>116</sup> Ibid, *passim*: The few reports received via telegraph are from Imboden written sometime prior to 10 June.

<sup>117</sup> Ibid., 485: Union signal officers would sent a constant stream of information to Meade from 2 to 4 July.

<sup>118</sup> Ibid, 87

### ***Was the Army of Northern Virginia composed of operationally durable formations?***

The means to conduct distributed operations lie in the operationally durable formations that fight them. Such formations must be capable of sustained, continuous action which move through the depth and breadth of the operational theatre in order to reinforce the exhaustion of the enemy force which leads to its collapse. Analysis reveals that while Lee's Army of Northern Virginia was designed to be a composite of operationally durable forces; the sum was not operationally durable owing to lack of logistics support, communications and national command and control weaknesses.

In 1862 the largest Confederate formation was the division. Problems with the synchronization of division employment during that summer's Peninsular Campaign led to the creation of two "wings" commanded by General's Jackson and Longstreet. In the fall of 1862 the Confederate Congress passed enabling legislation to formally create two corps. These corps were formed from the two existing wings and with the Army of Northern Virginia's nine divisions divided between them. Generals Longstreet and Jackson were appointed as their commanders.<sup>119</sup>

The corps itself was arguably one of the more significant developments of Napoleonic warfare. Napoleon's formation of the Corps d'Armee offered a self-contained organization designed to move independently and fight as an entity for up to 48 hours as other corps moved to its support. As part of classical military practice, Lee and others were undoubtedly influenced by the success of these organizations and urged their formal adoption by Congress.

Unfortunately, once organized, the Army of Northern Virginia's corps were much too large to be easily moved, supplied or fought. Corps, then consisting of some 30,000 soldiers, were as Lee observed "...more than one man can properly handle and keep under his eye in battle [and] frequently beyond his reach".<sup>120</sup> Lee's solution, adopted by Davis and the Congress in spring 1863 was to create a third corps from the existing two. General Jackson's Corps (lacking a

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<sup>119</sup> Luvaas, 5

<sup>120</sup> Manarin, 447

commander following his death in May 1863) was essentially split between two new Corps Commanders: A.P. Hill and Richard Ewell.

These corps, with their own supply and ordnance organizations were designed for sustained independent operations. Essential to the capacity for independent operations was an accompanying reorganization of artillery. The classical model featured artillery organic to each division. Lee's reorganization would see the artillery centralized at the corps-level in order to allow the commander to mass the effects of his artillery at one point rather than see his cannon "frittered away" among his divisions and brigades. Thus, the Army of Northern Virginia had been significantly reorganized just prior to the campaign. Lee's tension stemmed from his realization that formations needed to be large enough, and self sustaining enough, to conduct independent operations, yet procedures had to be in place to allow senior commanders (e.g. corps and army commanders) the direct access to assets required to directly influence the battle. The effects of this reorganization were indeed an early recognition of the need to balance the need for centralized command procedures with spatial separation.

Unfortunately, while the Army of Northern Virginia's corps may have been operationally durable, the Army itself was not. As previously analyzed two of the requisites for creating operational durability were conspicuously absent: the logistics structure did not support continued employment and the control and communications means and substance did not allow the opportunities for operational employment to be recognized and acted upon. Another factor is significant: the Army of Northern Virginia was not controlled in an operationally durable manner by the Confederacy's national command authorities. While it may have been composed of durable formations, for the whole to be durable it must be combined with other like formations and employed holistically to attain an overarching aim. This did not happen.

As the army itself evolved into a classical corps organization, President Davis proved unable to see the greater implications of operational command. In the spring of 1862, Davis personally vetoed a bill then being considered in Congress to create a single commanding general for all of

the Confederacy's armies. Davis was opposed to the measure because, in his mind, no one would oversee planning and preparation only to “be replaced at the moment of action” by a field commander who would supervise execution.<sup>121</sup> As a result, during the Gettysburg Campaign no single uniformed officer would have the requisite command authority to coordinate the use of the various forces in Army Groups to achieve truly operational effects in a distributed manner. Even General Johnston, thought by some to have been an example of an early Confederate Army Group Commander failed in this respect. No matter Davis’ intent behind Johnston’s appointment, Johnston himself saw neither the need nor possibility to perform this function throughout the campaign refused to exercise simultaneous command of Generals Bragg and Pemberton toward a common aim.<sup>122</sup> Thus, the Confederacy in 1863 would neither allow nor grasp that unity of command needed to truly allow the formation of operationally durable formations.

In conclusion, while the reorganization of the Army of Northern Virginia into corps with centralized supply and support functions may have been a model for durable formations; their use as such was limited by the lack of continuous logistics and communications. As well, the lack of an overarching command structure to synchronize the use of Armies within the Confederacy led to a purely localized use of force which is counter to the desired effect of operational durable formations.

### ***Does the Gettysburg Campaign represent distributed deployment?***

Lee’s campaign design resulted from the tension inherent between the need to distribute and concentrate forces for operational purposes. On one hand, forces must be concentrated in space in order to mass effects. On the other hand, the industrial age’s new reliance upon the resource base needed to support production and supply of increasingly mechanized armies leads to a diffusion, a distribution of forces needed to protect these bases. In retrospect, while Lee realized

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<sup>121</sup> Joseph T. Glathaar, Partners in Command, (New York: The Free Press, 1994), 119

<sup>122</sup> Ibid., 125

he could not achieve both at the same time, his operational design focused on capitalizing on the Union's requirement to protect its own resource centers in order to allow increased the Army of Northern Virginia' freedom of movement.

The need to distribute forces is rooted in a need to protect key sustaining bases and lines of communication. Industrial age warfare featured a greater association between military forces and terrain objectives. Thus, in part, the Confederacy was forced to deploy units along the coast and interior of the South to retain access to ports (e.g. Wilmington and Vicksburg) and production centers (e.g. Atlanta and Richmond). This requirement produced a significant tension: the Confederacy needed to dedicate sufficient forces to protect its key sustaining bases while concurrently allowing itself sufficient force to maneuver.

Lee recognized this tension and sought to resolve the issue in two ways. The first were his constant calls for a complete mobilization of the public. Lee realized that modern warfare would no longer see a separation of the force from the population but would very much be “total war” and policies to exempt the private sector from public control would run counter to the requirements of this new model.<sup>123</sup> A greater centralization of the sustaining base would lead, in Lee’s mind, to a greater, more efficient leveraging of all available assets and prevent the misuse and wastage of rail line capacity, agricultural surpluses and industrial output.

Still, the need to distribute military force to protect key sustainment objectives would mark confederate policy. As noted previously, the deployment of forces in the spring of 1863 was inseparable to important sustaining features. Examples include General Pemberton’s forces defending the key inland port of Vicksburg, Beauregard’s forces dedicated to protecting key coastal ports and Bragg’s Army retaining control of the important pork producing areas in Tennessee. Still this policy, as Lee noted, would only lead to a slow strangulation of Confederate options. He saw invasion, at the expense of weakening some of those forces defending key

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<sup>123</sup> Manarin, 421-422

production centers or infrastructures, as the only available means to avoid culmination and force a decision. Thus, Lee's comment to General Jones that "there is no better way of defending a long line than moving into the enemy's country" represented a logical means to reduce that tension.<sup>124</sup> By threatening the enemy's production centers and transportation networks, Confederate forces would cause the north to dedicate increasing numbers of men to their protection and thus reduce those forces immediately opposed to its own fielded forces.

### ***Conclusions***

What then are the implications for the conduct of modern operations? What lessons can be drawn from the Gettysburg Campaign as a model of the application (or misapplication) of the operational art?

Perhaps the first is to emphasize the operational commander's need to both provide and receive support to and from strategic authorities. Strategic authorities must be provided viable operational alternatives and, once approved, must be continually informed as to the progress of the operational situation. Moreover, the strategic authorities must support the operational commander. This support takes several forms, first is their provision of a clearly stated, attainable strategic endstate. This, the basis of the operational art, must be provided and clearly understood by both strategic and operational authorities. Next, strategic commanders must provide the resources needed to support operations. In Davis' example, such support was not forthcoming and its lack had dire consequences for Lee's operations.

Next is that operational vision must encompass more than tactical possibilities. True operational vision results from an understanding of possibilities and capabilities. An operational commander must be able to see the opportunities, but most balance those opportunities against the capabilities of his force. While Lee applied operational vision to design a distributed operation; this same vision did not take into account the operational limitations imposed by an

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<sup>124</sup> Palmer, 426

antiquated communications structure and lack of logistical structure. Those limitations would finally result in the operations culmination after three days of sustained combat. These limitations can be seen in the framework of operational reach. As Lee would be forced to admit north of the Potomac the Army of Northern Virginia did not possess the logistics structure needed to provide the operational reach required for his aim; they did not have the reach to achieve the purpose.

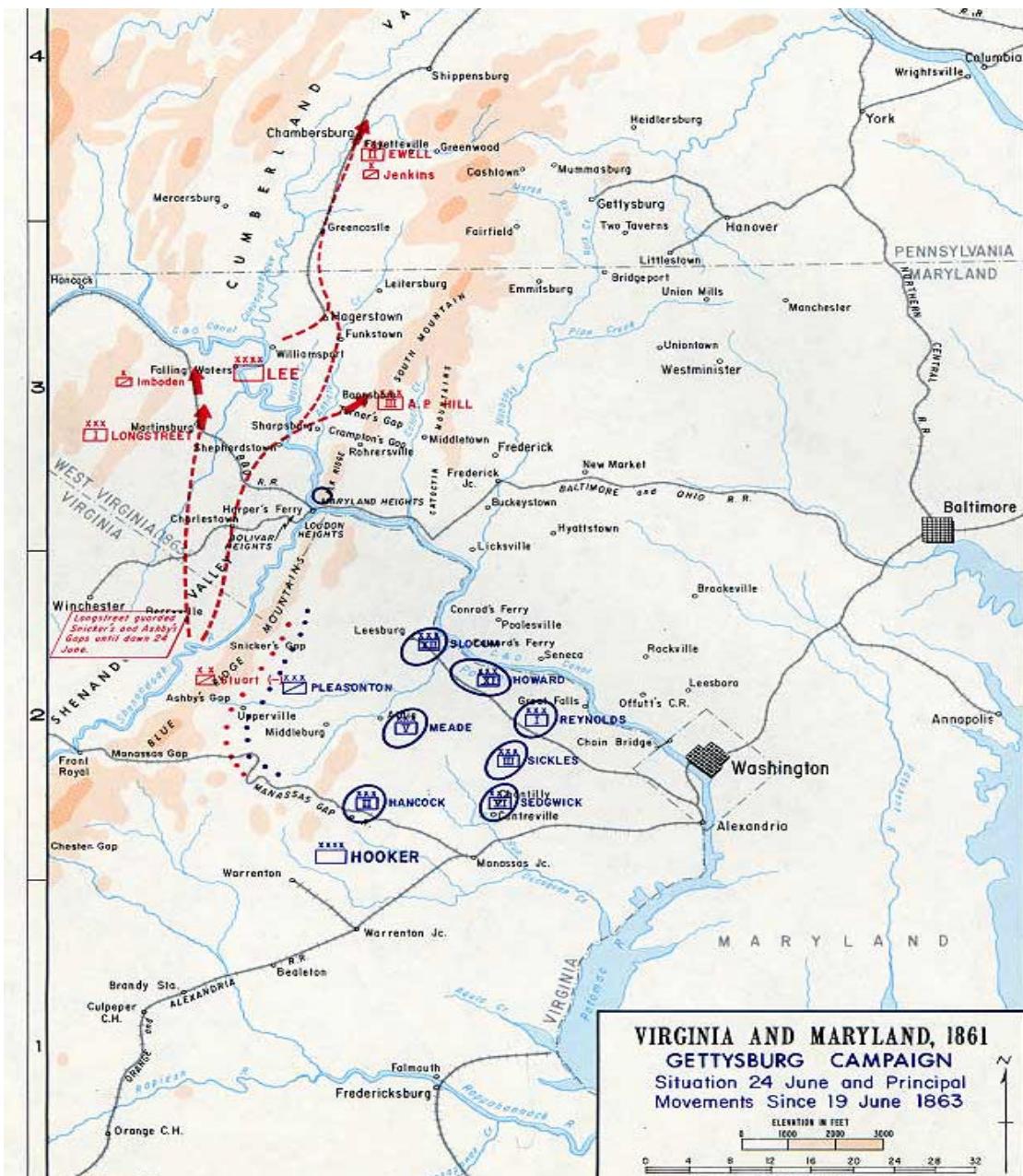
Purpose provides another lesson for modern commanders. Operations spatially separated are only united by the common aim provided by a clear understanding of commander's intent. Just as operational commanders design operations and campaigns to achieve desired strategic endstates, spatially isolated tactical commanders are united by their common understanding of operational intent. Without this understanding, they will not be able to recognize opportunity; much less seize it to their advantage. Thus Ewell, without a clear understanding of Lee's (perhaps unspoken, perhaps misunderstood) purpose, did not recognize the need to isolate Union forces on Cemetery Hill on 1 July; a failing that would eventually unhinge Lee's design for the battles themselves.

The final observation would be the benefits of the study not of tactics, but of operations. All too often military professionals delve into the study of tactical execution at the expense of the study of the operational art. Noting the importance of the operational art, Lieutenant General Leonard D. Holder rightly claimed that only a rigorous program of operational study would allow the translation of operational theory into practice.<sup>125</sup> As a means to enable LTG Holder's recommendation, the study of the operational aspects of past operations and campaigns can greatly enhance the operational acumen of serving officers. As this monograph has demonstrated, Gettysburg offers one such rich example.

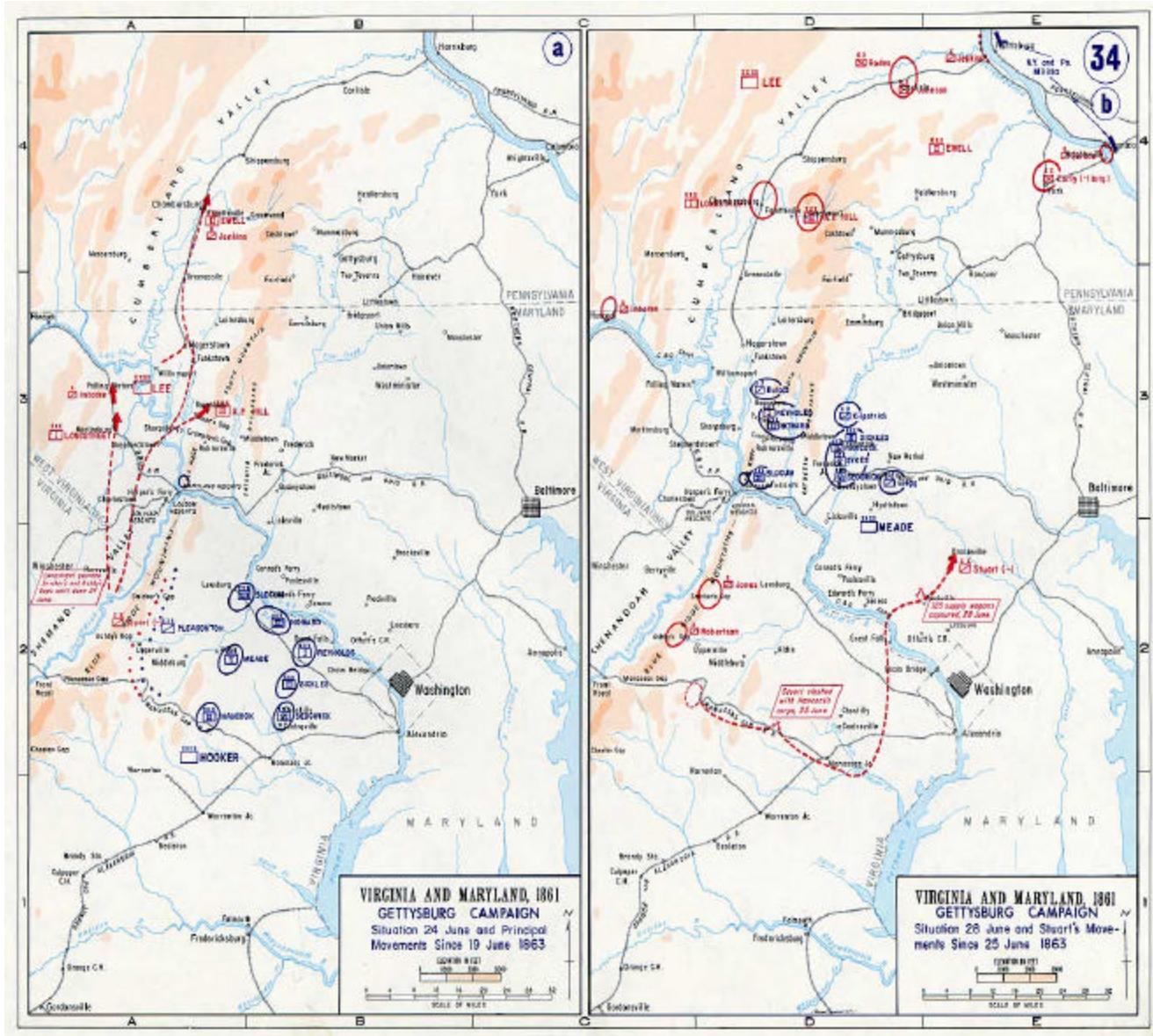
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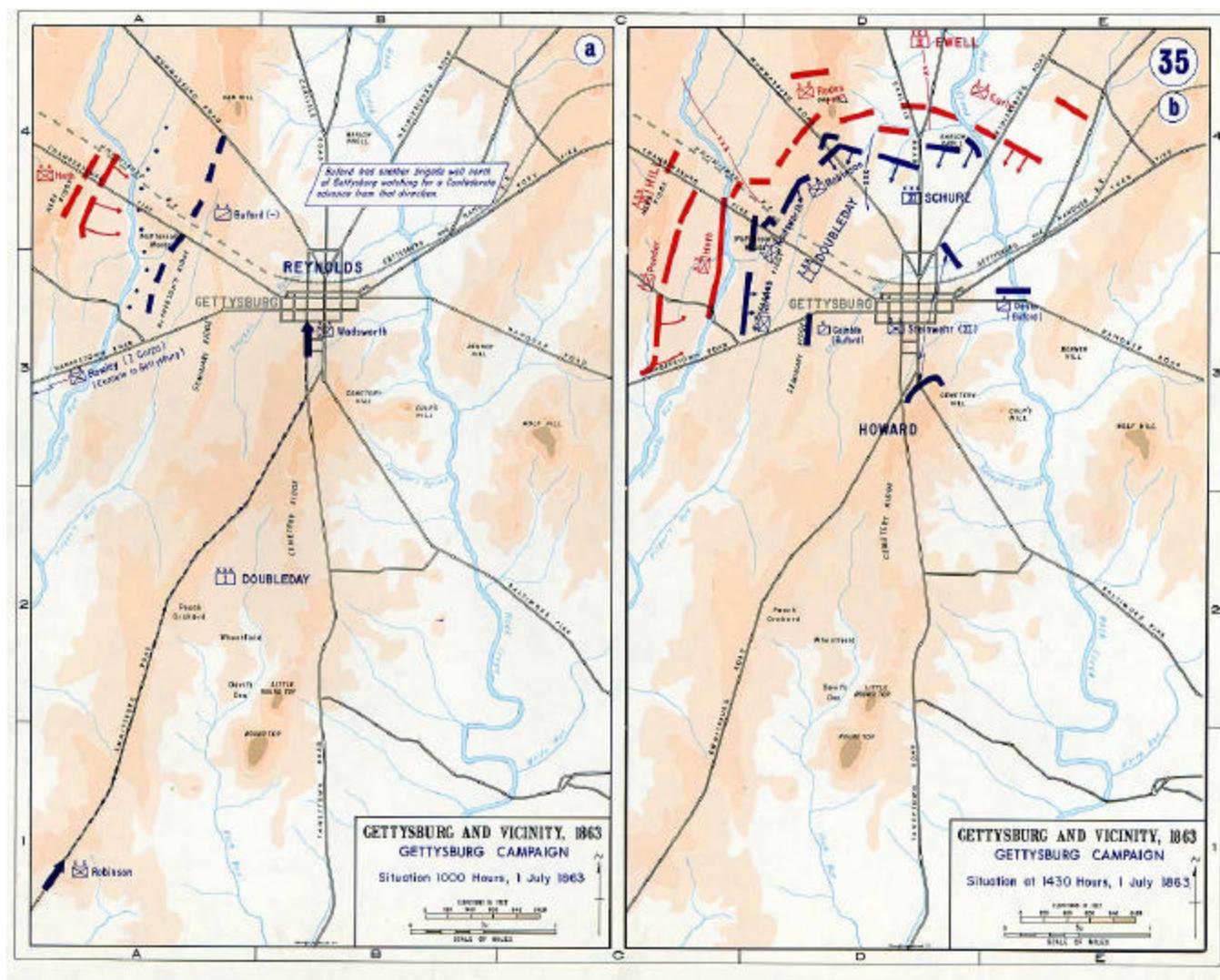
<sup>125</sup> Leonard D. Holder (LTG) "Education and Training for Theatre Warfare" in On Operational Art, Clayton R. Newell ed., (Washington, D.C: Center for Military History, 1994), *passim*.

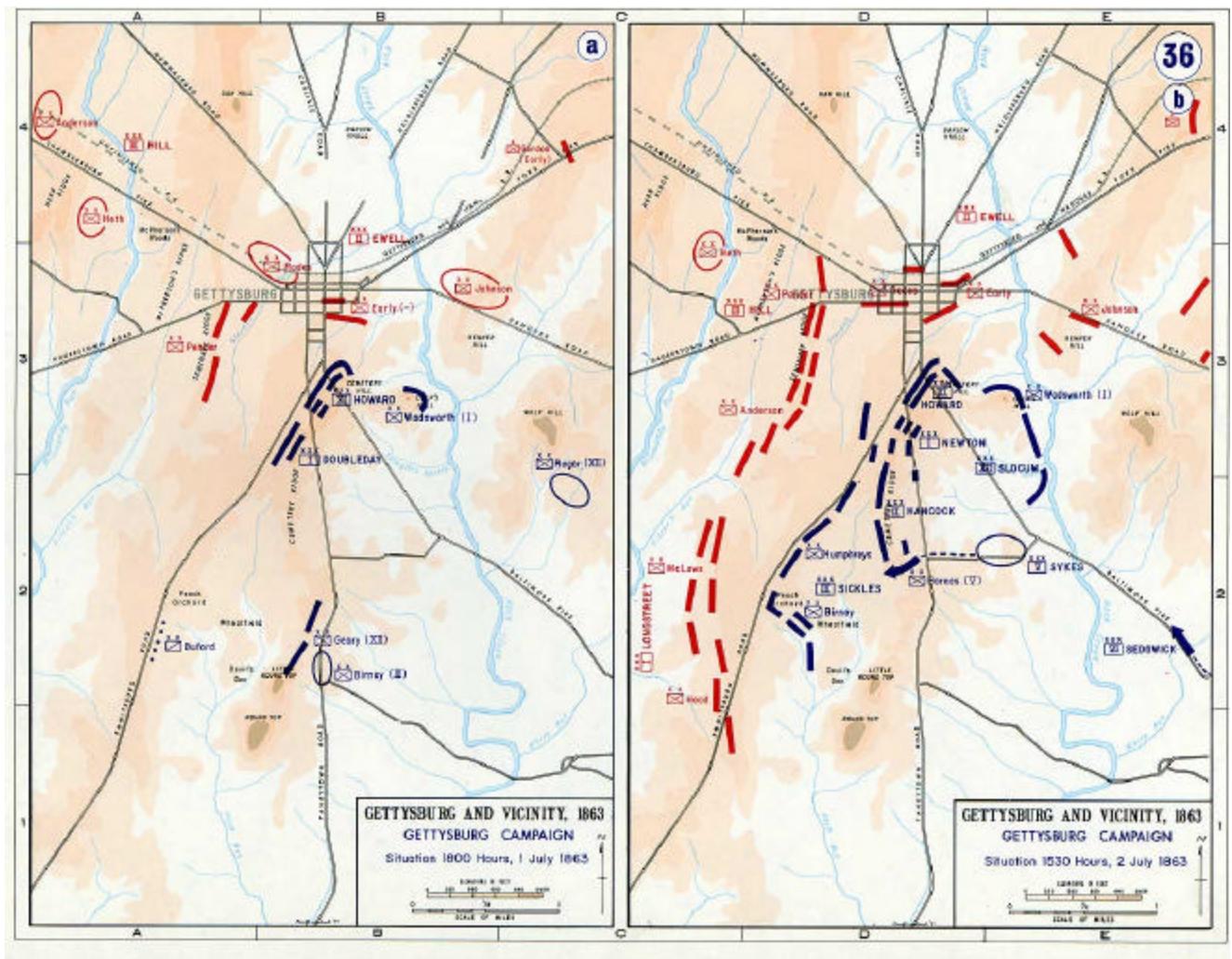
## Appendix A (Maps)

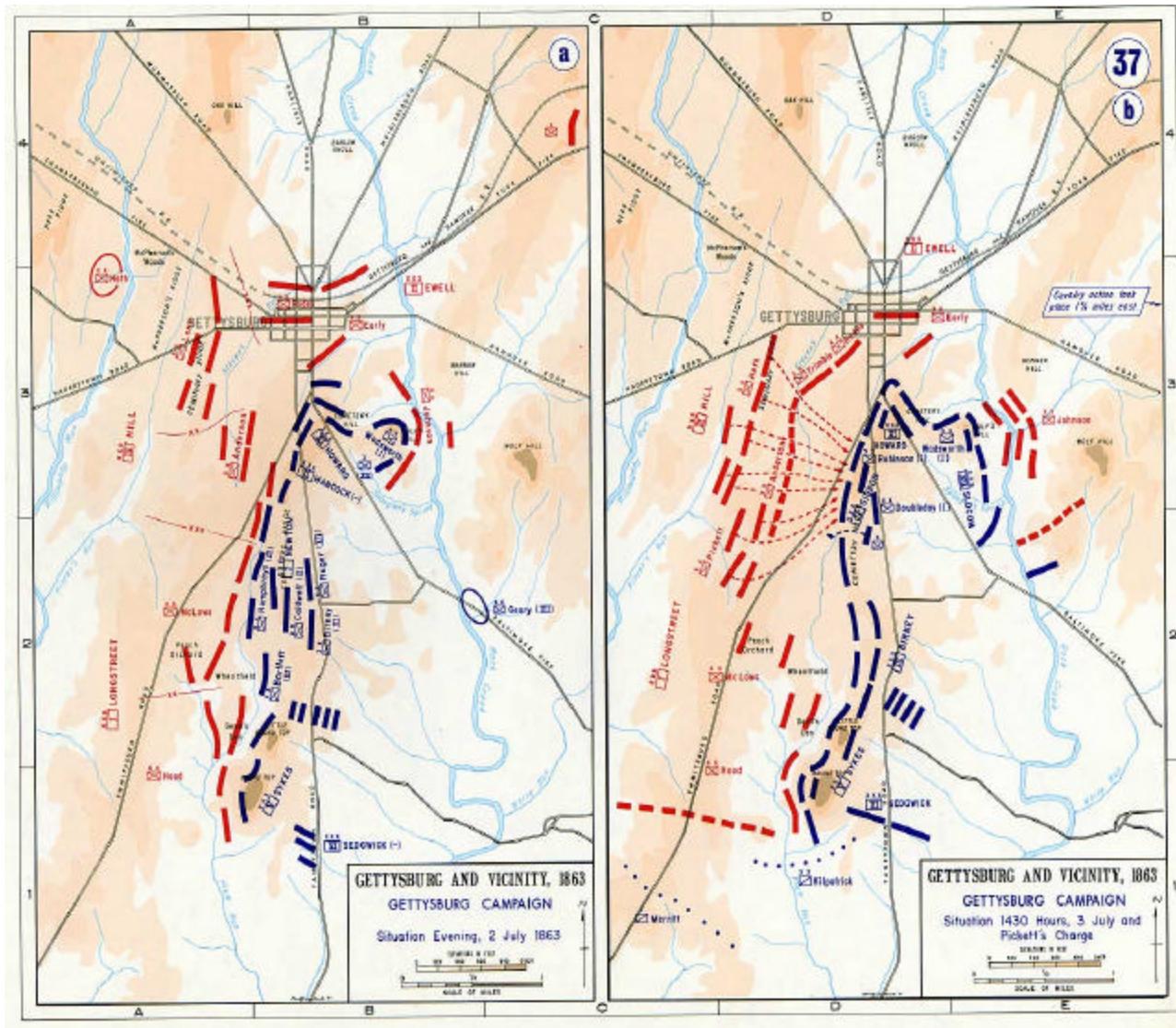


Maps taken from The West Point Military History Series: The American Civil War Thomas E. Griese ed. (Wayne, NJ: Avery Publishing Group, 1986) available on the internet at <http://www.dean.usma.edu/history/dhistorymaps/AcivilwarPages/>









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